Offshore Wind Affirmative – Table of Contents

1AC

Inherency

Contention 1 is Inherency:

Wind energy production is stalling in the United States – lack of long term tax subsidies from the federal government deters investors from investing in new projects.

USA Today, 2014

("US wind industry slammed by tax uncertainty, fracking," *USA Today*, April 19, Online: http://www.htrnews.com/viewart/20140420/MAN03/304200220/US-wind-industry-slammed-by-tax-uncertainty-fracking)

Once a booming industry, U.S. wind power saw its growth plummet 92 percent last year as it wrestled with tax uncertainties and cheap natural gas.¶ **The industry is still growing but not nearly as fast**, says a report by the American Wind Energy Association. It added a record 13,131 megawatts of power in 2012 but that fell to only 1,087 MW last year — the lowest level since 2004.¶ **One reason was investors' uncertainty that Congress would renew a federal wind tax subsidy. "People didn't know it would be passed ... so they weren't creating new projects"** early last year, says AWEA's president Tom Kiernan. He says **it takes about nine months to plan a wind farm, so the one-year extension in January 2013 didn't trigger a flurry of new wind farm construction** until the second half of 2013.¶ He expects **this year will see a rebound** in new capacity **but how much will depend on whether Congress extends the tax subsidy, which expired in January**. An extension is pending in the Senate. Retailer IKEA has announced Thursday that it's building a wind farm in Hoopeston, Ill., slated to open in early 2015.¶ The AWEA report is the latest to show the challenges confronting the clean energy sector. **Last year, investments in renewable energy fell 14percent globally and 10 percent in the United States,** according to an analysis by the United Nations Environment Programme. It says **U.S. investments in wind were $13.3 billion, down from $14.5 billion in 2012.**

Climate Change

Contention 2 is Climate Change:

The United States' relies almost exclusively on fossil fuels for energy – this results in massive amounts of CO2 production, spurring environmental harm.

Savitz, Vice President for U.S. Oceans and Executive Director of Coast Alliance, 2010

(Jacqueline, "Untapped Wealth: Offshore Wind Can deliver Cleaner, More affordable energy and More Jobs than Offshore Oil," *Oceana Report*, September, Online: http://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf)

Most of the energy generated in the United States comes from fuel sources that must be mined, drilled, or extracted from deep within the Earth—each of which comes with its own set of **negative environmental, economic, and sociological side-effects**. In 2009, the United States Department of Energy (DOE) reported that **85 percent of all of the country's energy was coming from fossil fuels like oil, natural gas, and coal**.5 **Continued use of fossil fuels is** very **risky: prices** of these non-renewable resources **are highly volatile**; **reliance on oil creates a dependence on countries that may pose threats to national security; and much of the environmental damage done by mining, drilling, and burning fossil fuels is irreversible**.¶ In addition, **fossil-fuel based energy production has hidden costs, including climate change. The carbon dioxide emissions from the fuels burned to produce energy are warming the planet**, **which results in** a long list of associated impacts, **ranging from melting sea ice and rising sea level to changes in patterns of food production and water availability. Carbon dioxide** from burning fossil fuels **alters the planet's climate systems, and it affects the oceans as well.¶ Ocean acidification,** or the decline in the pH of ocean water due to the absorption of carbon dioxide from the atmosphere, **is a major threat to marine ecosystems and species, as well as about one billion people who rely on the seas for food. Solving the global climate crisis requires a global transformation in energy production and consumption methods, including changes in transportation and electricity generation. The vast majority of our electricity comes from nonrenewable resources that have major environmental impacts,** while they also weaken national security, and have a wide range of economic and social costs.¶ Fortunately **there is time to modernize these systems and minimize these threats to the planet. Clean energy, energy efficiency, and hybrid or electric transportation are all part of a new energy economy that is being built right now.** Thousands of people are employed in "green collar" jobs relating to clean energy, and billions of dollars are being invested annually in renewable energy. **Even a small fraction of the United States' renewable energy resources is enough to power the country several times over**, **and one of the least expensive and easiest ways to produce clean energy that will decrease carbon emissions and help save the oceans comes from the seas themselves—offshore wind power**.

Failure to incentivize widespread offshore wind production in the US would lock in climate change – the result is extinction.

Thaler, Professor of Energy Policy, Law & Ethics at the University of Maine School of Law and School of Economics, 2012

(Jeff, "FIDDLING AS THE WORLD BURNS: HOW CLIMATE CHANGE URGENTLY REQUIRES A PARADIGM SHIFT IN THE PERMITTING OF RENEWABLE ENERGY PROJECTS," *Environmental Law,* Volume 42, Issue 4, September, Online: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2148122)

Thus, Part III focuses on one promising technology to demonstrate the flaws in current licensing permitting regimes, and makes concrete recommendations for reform.16 **Wind power generation from onshore** installations **is proven** technology, generates no greenhouse gases, consumes no water,17 is increasingly cost-competitive with most fossil fuel sources,18 and can be deployed relatively quickly in

many parts of the United States and the world.19 **Offshore wind** power is a relatively newer technology, especially deep-water floating projects, and **is presently less cost-competitive** than onshore wind.20 However, **because wind speeds are on average about 90% stronger and more consistent over water** than over land, **with higher power densities and lower shear and turbulence**,21 **America's offshore resources can provide more than its current electricity use**.22 Moreover, **since these** resources **are near many major population centers** that drive electricity demand, **their exploitation would "reduc[e] the need for new high-voltage transmission** from the Midwest and Great Plains to serve coastal lands."23 Therefore, in light of Part III's spotlight on literally dozens of different federal (let alone state and local) statutes and their hundreds of regulations standing between an offshore wind project applicant and construction, Part IV makes concrete statutory and regulatory recommendations to more quickly enable the full potential of offshore wind energy to become a reality before it is too late.¶ II. OUR ENERGY USE AND ITS RESULTANT CLIMATE CHANGE IMPACTS¶ A. Overview¶ Greenhouse gases (GHGs) trap heat in the atmosphere.24 **The primary GHG emitted by human activities is** carbon dioxide (**CO2**), **which** in 2010 **represented 84% of all human-sourced GHG emissions** in the U.S.25 "The combustion of fossil fuels to generate electricity is the largest single source of CO2 emissions in the nation, accounting for about 40% of total U.S. CO2 emissions and 33% of total U.S. greenhouse gas emissions in 2009."26 Beginning with the 1750 Industrial Revolution, atmospheric concentrations of GHGs have significantly increased with greater use of fossil fuels—which has in turn caused our world to warm and the climate to change.27 In fact**, climate change may be the single greatest threat to human society and wildlife**, **as well as to the ecosystems upon which each depends for survival**.28¶ In 1992, the U.S. signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC), the stated objective of which was:¶ [To achieve] stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.29¶ In 2007, **the** Intergovernmental Panel on Climate Change (**IPCC) concluded that it is "very likely"—at least 90% certain—that humans are responsible for most of the "unequivocal" increases in** globally averaged **temperatures** of the previous fifty years.30¶ **Yet** in the twenty years since the UNFCCC, it also is unequivocal that GHG **levels have not stabilized** but continue to grow, ecosystems and food production have not been able to adapt, and our heavy reliance on fossil fuels perpetuates "dangerous anthropogenic interference with the climate system."31 Equally unequivocal is that 2011 global temperatures were "the tenth highest on record and [were] higher than any previous year with a La Nina event, which [normally] has a relative cooling influence."32 The warmest thirteen years of average global temperatures also "have all occurred in the [fifteen] years since 1997."33 Global emissions of carbon dioxide also jumped 5.9% in 2010—500 million extra tons of carbon was pumped into the air—"the largest absolute jump in any year since the Industrial Revolution [began in 1750], and the largest percentage increase since 2003."34¶ In order **to even have a fifty-fifty chance** that **the** average global **temperature will not rise more than 2°C 35** beyond the temperature of 1750,36 **our cumulative emissions** of CO2 after 1750 **must not exceed one trillion tons.** However, by mid-October 2012 we had already emitted over 561 billion tons, and **at current rates, we will emit the trillionth ton in June 2043.**37 The consequence is that members of "the current generation are uniquely placed in human history: **the choices we make now**—in the next 10–20 years—**will alter the destiny of our species** (let alone every other species) **unalterably**, and forever."38 Unfortunately by the end of 2011, the more than 10,000 government and U.N. officials from all over the world attending the Durban climate change conference39 agreed that there is a "significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2°C or 1.5°C above pre-industrial levels."40¶ What are **some of the** growing economic, public health, and environmental **costs** to our country proximately caused41 by our daily burning of fossil fuels? **The** National Research Council (**NRC**) recently **analyzed the "hidden" costs of energy production** and use not reflected in market prices of coal, oil, and other energy sources, or in the prices of electricity and gasoline produced from them.42 For the year 2005 alone, **the NRC estimated $120 billion of damages** to the U.S. from fossil fuel energy production and use, reflecting primarily health damages from air pollution associated with electricity generation and motor vehicle transportation.43 Of that total, $62 billion was due to coal-fired electricity generation;44 $56 billion from ground transportation (oil-petroleum);45 and over $2.1 billion from electricity generation and heating with natural gas.46 The $120 billion figure did not include damages from climate change, harm to ecosystems and infrastructure, insurance costs, effects of some air pollutants, and risks to national security, which the NRC examined but did not specifically monetize.47 The NRC did, however, suggest that under some scenarios, climate damages from energy use could equal $120 billion.48 Thus, adding infrastructure and ecosystem damages, insurance costs, air pollutant costs, and fossil-fueled national security costs to reach a total of $240 billion, it becomes clear that **fossil consumption costs Americans almost $300 billion each yea**r49—a "hidden" number likely to be larger in the future.¶ What does the future hold for a carbon-stressed world? **Most scientific analyses** presently **predict that by 2050 the Earth will warm** by 2–2.5°C due to the rising level of GHGs in the atmosphere; at the high-end of projections, the 2050 warming could exceed 4.5°C.50 But those increases are not consistent globally; rather, "[i]n all possible [predicted] outcomes, the warming over land would be roughly twice the global average, and the warming in the Arctic greater still."51¶ For example, the NRC expects that **each degree Celsius** increase **will produce** double to quadruple the area burned by wildfires in the western United States, **a 5%–15% reduction in crop yields**, **more destructive power from hurricane**s, greater risk of very hot summers, and **more changes in precipitation frequency and amounts**.52 Globally, a summary of studies predicts that **at a 1°C global average temperature rise would reduce Arctic sea ice** by an annual average of 15% and by 25% in the month of September;53 at 2°C Europe suffers greater heat waves, the Greenland Ice Sheet significantly melts, and many land and marine species are driven to extinction;54 at 3°C **the Amazon suffers** severe drought and resultant **firestorms** that **will release significantly more carbon** into the atmosphere;55 at 4°C hundreds of billions of tons of carbon in permafrost melts, **releasing methane in immense quantities**, while the Arctic Ocean ice cap disappears and Europe suffers greater droughts.56¶ To presently assess what a 5°C rise will mean, we must look back into geological time**, 55 million years ago,** when **the Earth abruptly experienced**

dramatic global **warming due to the release of methane hydrates**—a substance presently found on subsea continental shelves.57 Fossils demonstrate that crocodiles were in the Canadian high Arctic along with rain forests of dawn redwood, and the Arctic Ocean saw water temperatures of 20°C within 200 km of the North Pole itself.58 And **a 6°C average rise** takes us even further back—to the end of the Permian period, 251 million years ago—**when up to 95% of species relatively abruptly became extinct**.59 This **may sound extreme**, but **the I**nternational **E**nergy **A**gency **warned** this year **that the 6°C mark is in reach by 2050 at current rates** of fossil fuel usage.60 However, even given the severity of these forecasts, many still question the extent to which our climate is changing,61 and thus reject moving away from our largely fossil-fueled electricity, transportation, and heating sources. Therefore, in this next subsection I provide the latest scientific data documenting specific climate impacts to multiple parts of the U.S. and global daily lives, and the costly consequences that establish the urgency for undertaking the major regulatory reforms I recommend in Part IV of this Article.¶ B. Specific Climate Threats and Consequences¶ 1. When Weather Extremes Increase¶ A 2011 IPCC Special Report predicted that:¶ **It is virtually certain** [99–100% probability] **that increases in the** frequency of warm **daily temperature extremes** and decreases in cold extremes **will occur throughout the 21st century on a global scale**. It is very likely [90–100% probability] that heat waves will increase in length, frequency, and/or intensity over most land areas. . . . It is very likely that average sea level rise will contribute to upward trends in extreme sea levels in extreme coastal high water levels.62¶ Similarly, a House of Representatives committee report (ACESA Report) found that "[t]here is a broad scientific consensus that the United States is vulnerable to weather hazards that will be exacerbated by climate change."63 It also found that the "cost of damages from weather disasters has increased markedly from the 1980s, rising to more than 100 billion dollars in 2007. In addition to a rise in total cost, the frequency of weather disasters costing more than one billion dollars has increased."64 In 2011, the U.S. faced the most billion-dollar climate disasters ever, with fourteen distinct disasters alone costing at least $54 billion to our economy.65 In the first six months of 2012 in the U.S., there were more than 40,000 hot temperature records, horrendous wildfires, major droughts, oppressive heat waves, major flooding, and a powerful derecho wind storm, followed in August by Hurricane Isaac ($2 billion damages), and in October by Hurricane Sandy ($50 billion damages).66¶ **The IPCC** Synthesis **identified impacts from growing weather hazards upon public health to include:** more frequent and more intense heat waves; more people suffering **death, disease, and injury from floods, storms, fires, and droughts**; increased cardio-respiratory morbidity and mortality associated with ground-level ozone pollution; **changes in the range of** some **infectious disease carriers** spreading, for example, malaria and the West Nile virus; and increased malnutrition and consequent disorders.67 The NRC Hidden Costs of Energy report's damage assessment concluded that the vast majority of the $120 billion per year were based on health damages,68 including an additional 10,000–20,000 deaths per year.69 By 2050, cumulative additional heat-related deaths from unabated climate change are predicted to be roughly 33,000 in the forty largest U.S. cities, with more than 150,000 additional deaths by 2100.70¶ Weather extremes also threaten our **national security**, which **is premised on stability**. In 2007, **the CNA** Corporation's report National Security and the Threat of Climate Change **described climate change as a "threat multiplier for instability"** and warned that:¶ Projected climate change poses a serious threat to America's national security. **The predicted effects** of climate change over the coming decades include extreme weather events, drought, flooding, sea level rise, retreating glaciers, habitat shifts, and the increased spread of life-threatening diseases. These conditions **have the potential to disrupt** our way of **life and** to **force changes in the way we keep ourselves safe and secure.**71¶ The following year, in the first ever U.S. government analysis of climate change security threats, **the National Intelligence Council issued an assessment warning**, in part, that climate **change could** threaten U.S. security by **lead**ing **to political instability**, mass movements of **refugees**, **terrorism, and conflicts over water and other resources**.72¶ 2. When Frozen Water Melts¶ In 2007, the IPCC predicted that sea levels would rise by eight to twenty-four inches above current levels by 2100;73 since then, however, **numerous scientists and studies have suggested that** the 2007 prediction is already out-of-date and that **sea levels will likely rise up to 1.4 meters** (m), or 55 inches, **given upwardly trending CO2 emissions**.74 The 2009 ACESA Report found that rising sea levels are:¶ [A]lready causing inundation of low-lying lands, corrosion of wetlands and beaches, exacerbation of storm surges and flooding, and increases in the salinity of coastal estuaries and aquifers. . . . Further, about one billion people live in areas within 75 feet elevation of today's sea level, including many US cities on the East Coast and Gulf of Mexico, almost all of Bangladesh, and areas occupied by more than 250 million people in China.75¶ This year NASA's Chief Scientist testified to Congress that two-thirds of sea level rise from the last three decades is derived from the Greenland and Antarctic ice sheets and the melting Arctic region; he then warned:¶ [T]he West Antarctic ice sheet (WAIS), an area about the size of the states of Texas and Oklahoma combined . . . contains the equivalent of 3.3 m of sea level, and all that ice rests on a soft-bed that lies below sea level. In this configuration, as warm seawater melts the floating ice shelves, causing them to retreat and the glaciers that feed them to speed up, there is no mechanism to stop the retreat and associated discharge, if warming continues. Thus the WAIS exhibits great potential for substantial and relatively rapid contributions to sea level rise.¶ In Greenland, the situation is not as dramatic, since the bed that underlies most of the ice is not below sea level, and the potential for unabated retreat is limited to a few outlet glaciers. In Greenland, however, summer air temperatures are warmer and closer to ice's melting point, and we have observed widespread accumulation of meltwater in melt ponds on the ice sheet surface.76¶ In the West Antarctic ice sheet region, glacier retreat appears to be widespread, as the air has "warmed by nearly 6°F since 1950."77 As for Greenland's ice sheet, it also is at greater risk than the IPCC had thought.¶ Recent studies with more complete modeling suggest that the warming threshold leading to an essentially ice-free state is not the previous estimate of an additional 3.1°C, but only 1.6°C. Thus, the 2°C target may be insufficient to prevent loss of much of the ice sheet and resultant significant sea level rise.78¶ The ACESA Report also identified the Arctic as "one of the hotspots of global warming"79 because "[o]ver the past 50 years average temperatures in the Arctic have increased as much as 7°F, five times the global average."80 Moreover, in "2007, a record 386,000 square miles of Arctic sea ice melted away, an area larger than Texas and Arizona combined and as big a decline in one year as has occurred over the last decade."81 "Arctic sea ice is melting faster than climate models [had] predict[ed,] and is about [thirty] years ahead" of the 2007 IPCC predictions, thus indicating that the Arctic Ocean could be ice-free in the late summer beginning sometime between 2020 and 2037.82¶ How is the Arctic's plight linked to non-Arctic impacts? "The Arctic region arguably has the greatest concentration of potential tipping elements in the Earth system, including Arctic sea ice, the Greenland ice sheet, North Atlantic deep-water formation regions, boreal forests, permafrost and marine methane hydrates."83 Additionally:¶ Warming of the Arctic region is proceeding at three times the global average . . . . Loss of Arctic sea ice has been tentatively linked to extreme cold winters in Europe . . . . Near complete loss of the summer sea ice, as forecast for the middle of this century, if not before, will probably have knock-on effects for the northern mid-latitudes, shifting the jet streams and storm tracks.84 ¶ Since 1980, sea levels have been rising three to four times faster than the global average between Cape Hatteras, North Carolina and Boston, Massachusetts.85 "[P]ast and future

global warming more than doubles the estimated odds of 'century' or worse floods occurring within the next 18 years" for most coastal U.S. locations.86¶ Although land-based glacier melts are not major contributors to sea level rise, they do impact peoples' food and water supplies. Virtually all of the world's glaciers, which store 75% of the world's freshwater, are receding in direct response to global warming, aggravating already severe water scarcity—both in the United States and abroad.87 While over 15% of the world's population currently relies on glacial melt and snow cover for drinking water and irrigation for agriculture, the IPCC projects a 60% volume loss in glaciers in various regions and widespread reductions in snow cover throughout the twenty-first century.88 Likewise, snowpack has been decreasing, and it is expected that snow cover duration will significantly decrease in eastern and western North America and Scandinavia by 2020 and globally by 2080.89¶ **Climate change thus increases food insecurity by reducing yields of grains,** such as corn and wheat, **through increased water scarcity and intensification of severe hot conditions,** thereby causing corn price volatility to sharply increase.90 Globally, the number of people living in "severely stressed" river basins will increase "by one to two billion people in the 2050s. About two-thirds of global land area is expected to experience increased water stress."91¶ 3. When Liquid Water Warms¶ Over the past century, oceans, which cover 70% of the Earth's surface, have been warming. Global sea-surface temperatures have increased about 1.3°F and the heat has penetrated almost two miles into the deep ocean.92 This increased warming is contributing to the destruction of seagrass meadows, causing an annual release back into the environment of 299 million tons of carbon.93 **Elevated atmospheric CO2 concentrations also are leading to higher absorption of CO2 into the upper ocean, making the surface waters more acidic** (lower pH).94 "[O**]cean chemistry currently is changing at least 100 times more rapidly than it has changed** during the 650,000 years preceding our [fossil-fueled] industrial era."95 **This acidification has serious implications for the calcification rates of organisms and plants living at all levels within the global ocean. Coral reefs**—habitat for over a million marine species—**are collapsing, endangering more than a third of all coral species**.96 Indeed, temperature thresholds for the majority of coral reefs worldwide are expected to be exceeded, causing mass bleaching and complete coral mortality.97 "[**T]he productivity of plankton**, krill, and marine snails, **which compose the base of the ocean food-chain**, [also] **declines as the ocean acidifies**,"98 adversely impacting populations of "everything from whales to salmon"99—species that are also are being harmed by the oceans' warming.100¶ **Extinctions** from climate change also **are expected to be significant and widespread.** The IPCC Fourth Assessment found that "approximately 20– 30% of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5– 2.5°C"101—a range likely to be exceeded in the coming decades. "[R]ecent studies have linked global warming to declines in such [] species as [] blue crabs, penguins, gray whales, salmon, walruses, and ringed seals[; b]ird extinction rates are predicted to be as high as 38[%] in Europe and 72[%] in northeastern Australia, if global warming exceeds 2°C above pre-industrial levels."102 Between now and 2050, Conservation International estimates that one species will face extinction every twenty minutes;103 the current extinction rate is one thousand times faster than the average during Earth's history,104 in part because the climate is changing more than 100 times faster than the rate at which many species can adapt.105¶ 4. When Land Dries Out¶ The warming trends toward the Earth's poles and higher latitudes are threatening people not just from melting ice and sea level rise, but also from the predicted thawing of 30%–50% of permafrost by 2050, and again as much or more of it by 2100.106 "The term permafrost refers to soil or rock that has been below 0°C (32°F) and frozen for at least two years."107 Permafrost underlies about 25% of the land area in the northern hemisphere, and is "estimated to hold 30[%] or more of all carbon stored in soils worldwide"— which equates to four times more than all the carbon humans have emitted in modern times.108 Given the increasing average air temperatures in eastern Siberia, Alaska, and northwestern Canada, thawing of the Northern permafrost would release massive amounts of carbon dioxide (doubling current atmospheric levels) and methane into the atmosphere.109 Indeed, there are about 1.7 trillion tons of carbon in northern soils (roughly twice the amount in the atmosphere), about 88% of it in thawing permafrost.110 Permafrost thus may become an annual source of carbon equal to 15%–35% of today's annual human emissions.111 But like seagrass meadows and unlike power plant emissions, we cannot trap or prevent permafrost carbon emissions at the source.¶ Similarly, forests, which "cover about 30[%] of the Earth's land surface and hold almost half of the world's terrestrial carbon . . . act both as a source of carbon emissions to the atmosphere when cut, burned, or otherwise degraded and as a sink when they grow."112 A combination of droughts, fires, and spreading pests, though, are causing economic and environmental havoc: "In 2003 . . . forest fires in Europe, the United States, Australia, and Canada accounted for more global [carbon] emissions than any other source."113 There have been significant increases in both the number of major wildfires and the area of forests burned in the U.S. and Canada.114 Fires fed by hot, dry weather have killed enormous stretches of forest in Siberia and in the Amazon, which "recently suffered two 'once a century' droughts just five years apart."115¶ Climate change also is exacerbating the geographic spread and intensity of insect infestations. For example:¶ [I]n British Columbia . . . the mountain pine beetle extended its range north and has destroyed an area of soft-wood forest three times the size of Maryland, killing 411 million cubic feet of trees—double the annual take by all the loggers in Canada. Alaska has also lost up to three million acres of old growth forest to the pine beetle.116¶ Over the past fifteen years the spruce bark beetle extended its range into Alaska, where it has killed about 40 million trees more "than any other insect in North America's recorded history."117 The drying and burning forests, and other increasingly dry landscapes, also are causing "flora and fauna [to move] to higher latitudes or to higher altitudes in the mountains."118¶ The human and environmental **costs from failing to promptly reduce** dependence on carbon-dioxide **emitting** sources for electricity, heating, and transportation **are dire and indisputable**. Rather than being the leader among major countries in per capita GHG emissions, **our country urgently needs to lead** the world in cutting 80% of our emissions by 2050 and using our renewable energy resources and technological advances to help other major emitting countries do the same. However, **significantly increasing our use of carbon-free renewable sources** to protect current and future generations of all species—human and non-human—**requires concrete changes in how our legal system regulates** and permits renewable energy sources. **One source with the potential for significant energy production and comparable elimination of fossil fueled GHGs near** major American and **global population centers is offshore wind**.

Peak Oil

Contention 3 is Peak Oil:

Peak oil is true – supplies are tapering off, new capture technologies don't increase production, and consumption is skyrocketing – severe economic shocks will bring famine and resource wars within 10 years.

Ahmed, executive director of the Institute for Policy Research & Development, 2013
(Nafeez, "Former BP geologist: peak oil is here and it will 'break economies'," *The Guardian*, December 23, Online: http://www.theguardian.com/environment/earth-insight/2013/dec/23/british-petroleum-geologist-peak-oil-break-economy-recession)

Dr. Miller critiqued the official industry line that global reserves will last 53 years at current rates of consumption, pointing out that **"peaking is the result of declining production rates, not declining reserves." Despite new discoveries and increasing reliance on unconventional oil and gas,** 37 countries are already post-peak, and **global oil production is declining at about 4.1% per year**, or 3.5 million barrels a day (b/d) per year:¶ "**We need new production equal to a new Saudi Arabia every 3 to 4 years to maintain and grow supply... New discoveries have not matched consumption since 1986**. We are drawing down on our reserves, even though reserves are apparently climbing every year. **Reserves are growing due to better technology** in old fields, raising the amount we can recover – **but production is still falling** at 4.1% p.a. [per annum]."¶ Dr. Miller, who prepared annual in-house projections of future oil supply for BP from 2000 to 2007, refers to this as the "ATM problem" – "more money, but still limited daily withdrawals." As a consequence: "**Production of conventional liquid oil has been flat since 2008. Growth in liquid supply since then has been largely of natural gas liquids** [NGL]- ethane, propane, butane, pentane - and oil-sand bitumen."¶ Dr. Miller is co-editor of a special edition of the prestigious journal, Philosophical Transactions of the Royal Society A, published this month on the future of oil supply. In an introductory paper co-authored with Dr. Steve R. Sorrel, co-director of the Sussex Energy Group at the University of Sussex in Brighton, they argue that **among oil industry experts "there is a growing consensus that the era of cheap oil has passed and that we are entering a new and very different phase**." They endorse the conservative conclusions of an extensive earlier study by the government-funded UK Energy Research Centre (UKERC):¶ "... **a sustained decline in global conventional production appears probable before 2030 and there is significant risk of this beginning before 2020**... on current evidence the inclusion of tight oil **[shale oil] resources appears unlikely to significantly affect this conclusion,** partly because the resource base appears relatively modest."¶ In fact, increasing dependence on shale could worsen decline rates in the long run:¶ "Greater reliance upon tight oil resources produced using hydraulic fracturing will exacerbate any rising trend in global average decline rates, since these wells have no plateau and decline extremely fast - for example, by 90% or more in the first 5 years."¶ Tar sands will fare similarly, they conclude, noting that "the Canadian oil sands will deliver only 5 mb per day by 2030, which represents less than 6% of the IEA projection of all-liquids production by that date."¶ Despite the cautious projection of global peak oil "before 2020", they also point out that:¶ "Crude oil production grew at approximately 1.5% per year between 1995 and 2005, but then plateaued with more recent increases in liquids supply largely deriving from NGLs, oil sands and tight oil. These trends are expected to continue... Crude oil production is heavily concentrated in a small number of countries and a small number of giant fields, with approximately 100 fields producing one half of global supply, 25 producing one quarter and a single field (Ghawar in Saudi Arabia) producing approximately 7%. Most of these giant fields are relatively old, many are well past their peak of production, most of the rest seem likely to enter decline within the next decade or so and few new giant fields are expected to be found."¶ "**The final peak is going to be decided by the price - how much can we afford to pay?",** Dr. Miller told me in an interview about his work. "**If we can afford to pay $150 per barrel, we could certainly produce more given a few years of lead time for new developments, but it would break economies again**."¶ Miller argues that **for all intents and purposes, peak oil has arrived as conditions are such that despite volatility, prices can never return to pre-2004 levels**:¶ "**The oil price has risen almost continuously since 2004 to date, starting at $30**. **There was a great spike to $150** and then a collapse in 2008/2009, but it has since climbed to $110 and held there. **The price rise brought a lot of new exploration and development, but these new fields have not actually increased production by very much**, due to the decline of older fields. This is compatible with the idea that we are pretty much at peak today**. This recession is what peak feels like**."¶ Although he is dismissive of shale oil and gas' capacity to prevent a peak and subsequent long decline in global oil production, Miller recognises that there is still some leeway that could bring significant, if temporary dividends for US economic growth - though only as "a relatively short-lived phenomenon":¶ "We're like a cage of lab rats that have eaten all the cornflakes and discovered that you can eat the cardboard packets too. Yes, we can, but... Tight oil may reach 5 or even 6 million b/d in the US, which will hugely help the US economy, along with shale gas. Shale resources, though, are inappropriate for more densely populated countries like the UK, because the industrialisation of the countryside affects far more people (with far less access to alternative natural space), and the economic benefits are spread more thinly across more people. Tight oil production in the US is likely to peak before 2020. There absolutely will not be enough tight oil production to replace

the US' current 9 million b/d of imports."¶ In turn, by prolonging global economic recession, high oil prices may reduce demand. Peak demand in turn may maintain a longer undulating oil production plateau:¶ "We are probably in peak oil today, or at least in the foot-hills. Production could rise a little for a few years yet, but not sufficiently to bring the price down; alternatively, continuous recession in much of the world may keep demand essentially flat for years at the $110/bbl price we have today. But we can't grow the supply at average past rates of about 1.5% per year at today's prices."¶ **The fundamental dependence of global economic growth on cheap oil supplies suggests that as we continue into the age of expensive oil and gas, without appropriate efforts to mitigate the impacts and transition to a new energy system, the world faces a future of economic and geopolitical turbulence**:¶ "**In the US, high oil prices correlate with recessions**, although not all recessions correlate with high oil prices. It does not prove causation, but **it is highly likely that when the US pays more than 4% of its GDP for oil,** or more than 10% of GDP for primary energy, **the economy declines as money is sucked into buying fuel instead of other goods and services... A shortage of oil will affect everything in the economy.** I expect **more famine, more drought, more resource wars and a steady inflation in the energy cost of all commodities."**

Oil dependence creates multiple scenarios for war – increases the incentive to go to war while short-circuiting barriers to conflict.

Glaser, Professor of Political Science and International Relations at George Washington University, 2011

(Charles, "Reframing Energy Security: How Oil Dependence Influences U.S. National Security," August, Online: http://depts.washington.edu/polsadvc/Blog%20Links/Glaser_-_EnergySecurity-AUGUST-2011.docx)

Oil dependence could reduce a state's security if its access to oil is vulnerable to disruption and if oil is necessary for operating the state's military forces. Vulnerable energy supplies can leave a state open to coercion—recognizing that it is more likely to lose a war, the state has a weaker bargaining position and is more likely to make concessions.[1] Closely related, if war occurs the state is more likely to lose. Conflict that is influenced by this mechanism is not fundamentally over the oil;[2] rather, when states already have incentives for conflict, the oil vulnerability influences their assessment of military capabilities and in turn the path to war. Recognizing this type of danger during the Cold War, U.S. planning to protect its sea lanes of communication with the Persian Gulf was motivated partly by the importance of insuring the steady flow of oil that was necessary to enable the United States to fight a long war against the Soviet Union in Europe. During the Second World War, Japan's vulnerability to a U.S. oil embargo played an important role in destroying Japan's ability to fight.[3] This type of threat to the U.S. military capabilities is not a serious danger today because the United States does not face a major power capable of severely interrupting its access to key supplies of oil. In contrast, China does face this type of danger because its oil imports are vulnerable to disruption by the U.S. Navy. **Protecting access to oil threatens other states—an access-driven security dilemma The vulnerability of a state's access to oil supplies could reduce its security via a second, more complicated mechanism—if the state's efforts to protect its access to oil threaten another state's security, then this reduced security could in turn reduce the state's own security.** The danger would follow standard security-dilemma logic, but with the defense of oil supply lines replacing the standard focus on protection of territory. In the most extreme case, **a state could try to solve its import vulnerability through territorial expansion. In less extreme cases, the state could deal with its vulnerability by building up military forces required to protect its access to oil, which has the unintended consequence of decreasing its adversary's military capability and signaling that the state's motives are malign, which decreases the adversary's security, which leads the adversary to build up its own military forces.**[4] **Just as protecting a distant ally can require a state to adopt an offensive capability, protecting access to oil can require offensive power-projection capabilities.** Thus, a state's need to protect its access to oil could create a security dilemma that would not otherwise exist. Conflict fueled by this security dilemma need not be over oil or access to oil; **by damaging political relations the security dilemma could prevent the states from resolving political disputes and avoiding the escalation of crises.** Here again, the United States does not currently face this type of danger; this is largely because the military status quo currently favors the United States, which relieves it from having to take provocative actions. In contrast, China's **efforts to protect its access to oil could be more provocative and generate military competition** with the United States. Oil makes territory increasingly valuable In this type of case, a state places greater value on owning territory because the territory contains energy resources that are increasingly valuable. The greater value of territory can increase competition between states, because the benefits of success grow relative to the costs of competition, for example, the costs of arming. For similar reasons, **the greater value of territory increases the probability that crises over territory will lead to war instead of negotiated compromises, as states are more willing to run the risks of fighting**.[5] This type of conflict is the classic resource war, which is the path by which oil is most commonly envisioned leading to conflict.[6] We can also hypothesize that the probability of conflict is greater when territorial boundaries are contested and the political status quo is ambiguous. Because the norm of state

sovereignty is now widely held, states are less likely to launch expansionist wars to take other states' territory. However, when boundaries are not settled, states are more likely to compete to acquire territory they value and will compete harder when they value it more.[7] In addition, **unsettled boundaries increase the possibilities for boundedly rational bargaining failures that could lead to war.** There are two basic paths via which a state could become involved in this type of oil conflict. The more obvious is for the state to be a claimant in the dispute and become directly involved in a territorial conflict. The second is likely more important for the United States—**an alliance commitment could draw the state into a resource conflict that initially began between its ally and another state**.[8] **The state would not have energy interests of its own at stake, but intervenes to protect its ally. Along this path, energy plays an important but less direct role in damaging the state's security, because although energy interests fuel the initial conflict, they do not motivate the state's intervention**.[9] A later section explores the possibility of conflict between China and Japan in the East China Sea, with the United States drawn in to protect Japan and consequently involved in a war with China. **When a state's economy depends heavily on oil, severe supply disruptions might do sufficiently large economic damage that the state would use military force to protect its prosperity.** A state this suffers this vulnerability risks not only suffering the damage that could be inflicted by a supply disruption, which might be the by-product of unrelated domestic or international events, but also risks being coerced by an adversary. Consequently, **states will want to be confident that their ability to import oil will be uninterrupted and will pursue policies to ensure secure access**.

Those conflicts go nuclear.

Heinberg, Senior Fellow of the Post Carbon Institute & faculty at the New College of California, 2004

(Richard, "Book Excerpt: Powerdown: Options and Actions for a Port-Carbon World," Online: http://www.energybulletin.net/node/2291)

If the leadership of the US continues with current policies, **the next decades will be filled with war, economic crises, and environmental catastrophe. Resource depletion and population pressure are about to catch up with us**, and no one is prepared. The **political elites**, especially in the US, are incapable of dealing with the situation. Their **preferred "solution" is simply to commandeer other nations' resources, using military force.¶ The worst-case scenario would be the general destruction of human civilization and most of the ecological life-support system of the planet**. That is, of course, a breathtakingly alarming prospect. As such, we might prefer not to contemplate it – except for the fact that considerable evidence attests to its likelihood. ¶ **The notion that resource scarcity often leads to increased competition is certainly well founded. This is general true among non-human animals, among which competition for diminishing resources typically leads to aggressive behaviour. ¶ Iraq is actually the nexus of several different kinds of conflict – between consuming nations** (e.g., France and the US); **between western industrial nations and "terrorist" groups; and – most obviously – between a powerful consuming nation and a weaker, troublesome, producing nation. ¶ Politicians may find it easier to persuade their constituents to fight a common enemy than to conserve and share.¶** War is always grim, but **as resources become more scarce and valuable, as societies become more centralized and therefore more vulnerable, and as weaponry becomes more sophisticated and widely dispersed, warfare could become even more destructive that the case during the past century. ¶** By far **the greatest concern for the future of warfare must be the proliferation of nuclear weapons. The US is conducting research into new types of nuclear weapons—bunker busters, small earth-penetrators**, etc. Recent US administrations have enunciated a policy of nuclear first-strike. ¶ Chemical and biological weapons are of secondary concern, although new genetic engineering techniques may enable the creation of highly infectious and antibiotic-resistant "supergerms" cable of singling out specific ethnic groups. ¶ Additionally, **the US has announced its intention to maintain clear military superiority to any potential rival** ("full-spectrum dominance"), **and is actively developing space-based weapons and supersonic drone aircraft capable of destroying targets anywhere on the planet at a moment's notice**. It is also developing an entirely new class of gamma-ray weapons that blur the critical distinction between conventional and nuclear weapons.

Solvency

Thus, we present the following plan:

The United States Federal Government should offer a long-term extension of tax credits to offshore wind energy projects located in U.S. territorial waters.

Contention 4 is Solvency:

Congress can help wind farms overcome cost hurdles by offering investment tax credit and loan guarantees – that will provide an essential boost to transition to renewable energy.

Caperton, Conathan, and Weidman, 2012

(Richard - Director of Clean Energy Investment, Michael - Director of Ocean Policy, and Jackie - a Special Assistant for the Energy Opportunity team at the Center for American Progress, "Encouraging Investment Is Key to U.S. Offshore Wind Development," *Center for American Progress,* Jan 12, Online: http://www.americanprogress.org/issues/green/news/2012/01/12/10951/encouraging-investment-is-key-to-u-s-offshore-wind-development/)

This view is backed by Maryland Gov. Martin O'Malley, but as The Washington Post reported earlier this week, his efforts to make his state a leader in offshore wind appear to be in jeopardy. Monday's article quoted Democratic Del. Dereck E. Davis saying, "**The situation has gotten worse — not better — for offshore wind since the last time it was up for debate**." **So what has changed?** Congress holds the key **The answer lies** in part in NRG Bluewater Wind's fate. NRG was unequivocal in the reasoning behind its decision to cancel its power-purchase agreement. The company's press release stated that it was "unable to find an investment partner." Specifically, NRG placed the blame for this outcome **squarely on the shoulders of Congress: Two aspects of the project critical for success have actually gone backwards: the decisions of Congress to eliminate funding for the Department of Energy's loan guarantee program applicable to offshore wind, and the failure to extend the Federal Investment and Production Tax Credits** … **which have rendered the** Delaware **project both unfinanceable and financially untenable**. While the challenges facing this project are big, they're solvable. As NRG alludes to, targeted, **efficient incentives from the federal government would allow this project to move forward.** The production tax credit **Currently, offshore wind projects are eligible for the production tax credit. This is a credit based on how much electricity a wind turbine generates**, and is currently worth 2.2 cents per kilowatt-hour. Unfortunately, **this credit expires at the end of 2012, and a long-term extension of the credit is uncertain**. CAP has called on Congress to extend the credit for four more years, which will provide needed policy certainty for investors in wind projects. The investment tax credit While NRG Bluewater Wind would clearly benefit from a production tax credit extension, **other incentives may be more useful** for this project. **For onshore wind projects—with relatively predictable performance over the life of the project—the production tax credit is very valuable. For offshore wind, however, the credit is less valuable to the project developer. Because offshore wind turbines are relatively new technology and are deployed in environments that have never been used for energy generation, developers can't predict how much power a turbine will generate as accurately as they can with onshore wind**. Thus, developers aren't as certain about how big their tax credits will be, which affects the profitability of the project. **Congress could fix this problem by making offshore wind eligible for the investment tax credit. Instead of getting a tax credit as power is generated, the investment tax credit would allow offshore wind developers to get an upfront credit for 30 percent of their initial investment, encouraging more to invest**. **This is much more useful for technologies with more performance uncertainty—like offshore wind—and would be a smart example of matching the tax code to the unique circumstances facing innovative industries.** Loan guarantees **Uncertainty around offshore wind turbines' operational performance also makes it difficult to finance these projects.** When a bank evaluates a wind farm, it predicts how much power the turbines will produce each year and will only "count" the power that they're extremely confident will be produced. **With an innovative technology like offshore wind, this**

could mean that only half of the turbines' expected output is "bankable." This affects whether or not a bank thinks the developer will pay back a loan, and ultimately influences whether or not a bank offers a loan. **This is a significant problem for offshore wind developers. But the federal government can solve this problem by guaranteeing a loan to a project developer. In this case the government agrees to pay back a loan if the developer is unable to. This puts banks at ease** (after all, the U.S. government has a perfect track record of paying back loans) **and will allow financing to flow freely. Congress has two simple ways to create a loan guarantee program for offshore wind. They can create a Clean Energy Deployment Administration, or "Green Bank," which would offer financing tools like loan guarantees for innovative technologies. Or they can allocate funding to cover the cost of new loan guarantees for offshore wind under the existing Department of Energy Loan Guarantee Program. Either way forward would help drive investment in the burgeoning offshore wind industry. Somehow, the bright outlook from just a few years ago—moving the United States toward energy independence—has fogged over despite overwhelming evidence from statewide polls that demonstrates sustained support for proposed projects. Congress has the power to support constituents' interests in the innovative clean energy and economic opportunities offshore wind can produce to move us out of the energy Stone Age and into a sustainable future**.

Case Debate

Climate Change Advantage

Answers to: Climate change is a natural cycle

Climate change isn't natural, it's caused by CO2 emissions – statistical analysis of average temperatures around the world shows a distinct spike since the industrial era began.

Foley, reporter for Nature World News, 2014

(James, "Historical Analysis of Climate Change Supports Man-Made Warming with 99.9% Certainty," *Nature World News*, April 11, Online: http://www.natureworldnews.com/articles/6598/20140411/historical-analysis-of-climate-change-supports-man-made-warming-with-99-9-certainty.htm)

New historical climate analysis by a McGill University researcher **indicates that climate change in the industrial era is man-made with "greater than 99.9 percent" certainty.¶** Writing in the journal Climate Dynamics, McGill **physicist Shaun Lovejoy reports his analysis of temperature data since the year 1500, concluding that global warming over the last century is not a result of natural long-term variations in temperature, but instead an anthropogenic effect.¶** "This study will be a blow to any remaining **climate-change deniers**," Lovejoy said in a statement. "Their **two most convincing arguments - that the warming is natural in origin, and that the computer models are wrong - are either directly contradicted by this analysis, or simply do not apply to it."¶ Lovejoy's approach did not rely on** climate-simulating **computer models, but a statistical analysis based on historical temperature records. The research employed a technique** called "multi-proxy climate reconstructions" which are used **to estimate historical temperatures. These climate reconstructions take into account data derived from tree rings, ice cores and lake sediments.¶ The likelihood that global warming since 1880 is due to natural variability can be ruled out "with confidence levels greater than 99 percent,** and most likely greater than 99.9 percent," Lovejoy said.¶ To analyze industrial-era climate change, Lovejoy used carbon dioxide from the burning of fossil fuels as a proxy for all man-made climate influences. This simplification is justified, Lovejoy said, because of the "tight relationship between global economic activity and the emission of greenhouse gases and particulate pollution."¶ "This allows the new approach to implicitly include the cooling effects of particulate pollution that are still poorly quantified in computer models," Lovejoy added.¶ Lovejoy's research falls in line with the recently released IPCC report on climate change. **A doubling of carbon dioxide levels in the atmosphere would cause warming between 2.5 and 4.2 degrees Celsius.** The IPCC report predicted temperatures would rise by 1.5 to 4.5 degrees Celsius if CO2 concentrations double.¶ "**We've had a fluctuation in average temperature that's just huge since 1880 - on the order of about 0.9 degrees Celsius**," Lovejoy said. **"This study shows that the odds of that being caused by natural fluctuations are less than one in a hundred and are likely to be less than one in a thousand.**¶ "While the statistical rejection of a hypothesis can't generally be used to conclude the truth of any specific alternative, in many cases - including this one - the rejection of one greatly enhances the credibility of the other," he said.

Answers to: Other countries produce CO2 emissions

Offshore wind is taking off across the globe – the US is falling behind.

Kaldellis and Kapsali, Lab of Soft Energy Applications & Environmental Protection at the Technical Institute of Piraeus, 2013

("Shifting towards offshore wind energy—Recent activity and future development," *Energy Policy*, February, Online: http://www.sealab.gr/download/attachments/15565224/Shifting+towards+offshore+wind+energy--Recent+activity+and+future+development.pdf?version=1&modificationDate=1397239188000)

The year 2010 was a record-breaking year for the European offshore wind energy market. New installations accounted for about 900 MW (Fig. 1) (**which was about 10% of all new wind power installations**) (EWEA, 2011). As for the end of 2011, 235 new offshore wind turbines, with a total capacity of about 870 MW, were fully connected to the power grids of the UK, Germany, Denmark and Portugal. In total, as for the end of 2011, there were almost 1400 offshore wind turbines fully grid connected with a total capacity of about 3.8 GW (Fig. 1) comprising 53 wind farms spread over ten European countries.¶ **As of February 2012, the Walney wind farm** in the United Kingdom **is the largest offshore wind farm in the world** (367 MW), followed by the Thanet offshore wind project (300 MW), in the UK. The London Array (630 MW) is the largest project currently under construction which is also located in the UK. In total, 18 new wind farms, totalling 5.3 GW are currently under construction and 18 GW are fully-consented in twelve European countries with Germany possessing almost 50% of the total consented installations (EWEA, 2012). Once completed, Europe's offshore wind power capacity will reach 27 GW.¶ Up till now **vast deployment has taken place in Northern Europe**, a situation expected to continue for the next few years as well. **Actually, more than 90% of the global offshore wind farms are located in European waters**. The leading markets are currently the UK, Denmark and the Netherlands with cumulative capacity ratings of 2094 MW, 857 MW and 247 MW respectively (as for the end of 2011), see Fig. 2. By 2020, offshore wind power scenarios entail a quite ambitious development path with 75 GW installations worldwide, with significant contribution expected from the United States and China (EWEA, 2007).¶ **China**, **the world's largest onshore wind power developer**, with a total of about 62 GW by the end of 2011, erected the first large-scale commercial offshore wind farm (Donghai Bridge) outside Europe in 2009, adding 63 MW by year-end for a project that reached 102 MW upon completion in the early 2010. **Thus, although offshore wind power development in China has much delayed, the year 2010 marked the start of transition** for the local offshore wind power sector from research and pilot projects to operational wind farms. Today, China has about 230 MW (including an intertidal project) of offshore wind power installations. According to the Chinese Renewable Energy Industries Association (CREIA) (CREIA, 2011), **China is planning to exploit its vast offshore wind resources** (Da et al., 2011) by greatly expanding its offshore capacity to 5 GW by 2015 and 30 GW by 2020, as a result of the country's commitment for 40–45% (from the base year 2005) (Zhang et al., 2010) carbon emission reduction until 2020.¶ **On the other hand**, **as for the end of 2011, there are no offshore wind power projects operating off the United States,** which is the second world leader in land-based wind energy. **The only approved project,** after a decade-long process, **is to be located off the coast of Massachusetts** and is expected to comprise 130 3.6 MW wind turbines that will be operational in 2012. However, U.S. offshore wind energy plans call for the deployment of 10 GW of offshore wind generating capacity by 2020 and 54 GW by 2030 (U.S. Department of Energy, 2011).¶ **Offshore wind power market is currently dominated by few companies**. On the demand side about ten companies or consortia account for all the offshore capacity presently in operation. Dong Energy (Denmark), Vattenfall (Sweden) and E.on (Germany) are the leading operators, all being giant European utilities. On the supply side, Siemens (formerly Bonus Energy A/S) and Vestas are by far the leading wind turbine manufacturers worldwide in terms of installed capacity. In Europe, their cumulative share reaches 90% (Fig. 3). However, there are several other manufacturers that are now developing new offshore wind turbines' types which are close to commercial viability. For instance, both Repower Systems and AREVA Multibrid installed commercial turbines of 5 MW under a pilot project (comprising the deepest large-scale operational offshore wind power project at that time, with an average distance from the shore of about 53 km) named "Alpha Ventus" in Germany in 2009. Sinovel also entered the market in 2009 with the SL3000/90, the first offshore wind turbine manufactured in China and installed in the "Donghai Bridge" project. More recently, **General Electric re-entered the offshore wind market** with the announcement of its 4.1 MW direct drive wind turbine, which is still under development (GE Energy, 2011).

Answers to: Other countries produce CO2 emissions

A strong wind industry in the United States can spur international emission reductions – it gives us leverage in international negotiations and makes us look less hypocritical.

Giordano, JD from University of Richmond School of Law, 2010

(Michael, "Offshore Windfall: What Approval of the United States' First Offshore Wind Project Means for the Offshore Wind Energy Industry," *University of Richmond Law Review*, 44:3, March, Online: http://lawreview.richmond.edu/offshore-windfall/)

A real offshore wind farm may encourage government to rethink investment in offshore wind energy. Potential developers who begin to invest large sums of capital will likely put pressure on federal and state politicians to increase government incentives for offshore wind. Such pressure may be what the industry needs in order to achieve the long-term financial guarantees it desires.[156] **Long-term guarantees will** then **lead to** even **further investment**.¶ **New investments will positively influence innovation and new technologies to meet offshore wind energy's growing needs. The industry will be better suited to develop larger turbines at a lower cost. As the cycle continues and the industry becomes more and more mature, offshore wind energy may someday gain a competitive advantage over other renewable energies and traditional fossil fuels**.¶ C. Global Impact¶ **Another important aspect of** Cape **Wind is its role in demonstrating to the world that the United States is committed to the development of renewable energy** and, in particular, offshore wind energy.[157] **The international community has criticized the United States for failing to show leadership on the issue of global climate change**.[158] **As the United Nations continues to seek an international agreement that addresses climate change on a world-wide level**,[159] **the United States can point to Cape Wind as a sign of things to come. Cape Wind's construction would provide a positive example of the United States' commitment to reducing greenhouse gas emissions and addressing global climate change.**¶ V. Conclusion¶ As the first proposed offshore wind project in United States waters, Cape Wind endured an arduous process filled with delays caused by skepticism and the lack of a defined regulatory scheme. The project's developers never flinched, despite the fact that their personal fortunes were on the line. Their persistence has paid off, as Cape Wind is one last hurdle away from beginning construction. New Englanders stand to receive an average output of approximately 186 MW of clean, renewable energy from Cape Wind's turbines;[160] however, **Cape Wind's greatest gifts will be the trail it blazes as America's first offshore wind farm, the confidence it will give to investors and policymakers, and the blueprint it will provide for future offshore wind energy projects**.

Answers to: People will still use fossil fuels for energy

Wind energy would replace carbon-based fuels used for generating electricity, heating, and cooking – that would drastically undermine fossil fuel use.

Savitz, Vice President for U.S. Oceans and Executive Director of Coast Alliance, 2010
(Jacqueline, "Untapped Wealth: Offshore Wind Can deliver Cleaner, More affordable energy and More Jobs than Offshore Oil," *Oceana Report*, September, Online: http://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf)

Currently, wind energy may not be seen as a viable replacement for oil and gas because the two types of energy are largely used for different things. Oil is most commonly used in transportation to fuel cars, trucks and other vehicles. Wind energy, on the other hand, is used to generate electricity which is most commonly used to power homes and businesses, although some transportation uses do currently rely on electricity. Less than 1 percent of electricity generated nationwide is fueled by petroleum70, while 99 percent of the petroleum used is consumed by cars and trucks. Less than 1 percent of our electricity is used for transportation, while 95 percent is used in the residential, business and industrial sectors.71¶ **Despite this apparent disconnect, wind power can directly offset oil consumption in the electricity generation and home heating sectors**. Currently, **43.7 million barrels of oil are consumed annually to generate electricity across the country**.72 **This amount of electricity**73 **could easily be generated by offshore wind.¶ Approximately 7 gigawatts** (GW) **of offshore wind power would be needed to replace the oil currently used in power generation**.74 While this may seem like a small amount **it would be an important step in moving away from fossil fuels and cutting down climate change pollution**—and it is clearly achievable. The U.S. already has about 35 GW of onshore wind in place and more on the way. The U.S. could have 20 GW of offshore by 2020 if it made the commitment to do so—the United Kingdom, which has made such a commitment, plans to install 33 GW of offshore wind by 2020. **The sooner renewable energies begin to replace oil in the electricity generating sector, the sooner carbon dioxide emissions and petroleum demand can begin to be reduced.¶** Another immediate way **offshore wind energy can cut oil and natural gas consumption is through heating. Many homes and buildings still use fuel oil and natural gas for heating** purposes such as space heating, cooking, and water heating.75 **On the East Coast, nearly 7 million homes rely on fuel oil as the primary source of heating, representing about 88 percent of the country's heating oil demand.**76 **Switching these homes** from fuel oil to electric heating (nearly 16.6 million homes on the East Coast already use electricity for their primary source of heating), **almost 123 million barrels of oil would be conserved annually**. About 5 GW of wind power would be needed to provide the electricity to heat these 7 million homes, an amount that is well in line with the projected 20 GW of offshore wind that could be in place by 2020.¶ **Installing 20 GW of offshore wind power with the explicit purpose of offsetting domestic oil consumption would generate enough energy to eliminate nearly 167 million barrels of oil demand annually—more than is currently used in home heating and electricity generation**.

Answers to: Wind can't supply enough energy to reduce emissions

Widespread adoption in coastal states would cut 335 million metric tons of CO2 emissions a year.

Savitz, Vice President for U.S. Oceans and Executive Director of Coast Alliance, 2010
(Jacqueline, "Untapped Wealth: Offshore Wind Can deliver Cleaner, More affordable energy and More Jobs than Offshore Oil," *Oceana Report*, September, Online: http://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf)

In addition to the environmental benefits over traditional energy sources, like coal, oil, natural gas and nuclear power, a significant amount of offshore wind energy potential exists on the Atlantic coast. If developed even modestly**, offshore wind energy could supply almost half of East Coast current electricity generation— while creating thousands of jobs, stabilizing electric costs, cutting fossil fuel consumption and reducing harmful air emissions. The prospects of offshore wind power are too large to ignore, even at this early stage of the industry's development.¶** Although onshore wind power in the United States currently supplies enough electricity for nearly seven million homes annually, to date no wind turbines have been installed offshore.63 However, **a handful of offshore wind projects are planned to be built in American waters representing a combined 2.5 gigawatts** (GW) **of electrical capacity**.64 **These projects alone**, if developed, **could produce enough electricity to power nearly 800,000 American homes annually—and eliminate over 6 million metric tons of carbon dioxide each year.**¶ However, **there is much more offshore wind potential available.** This analysis found that **conservatively, 127 gigawatts** (GW) **of offshore wind energy are currently economically available off the East Coast of the United States. Of the thirteen East Coast states** measured2, **six could supply more than 50 percent of their own electricity with offshore wind power**. Excluding New Hampshire's and Maine's potential (see note below Table 4), **offshore wind could supplant 70 percent of the East Coast's fossil-fuel based electricity. Providing this quantity of clean energy could cut 335 million metric tons of carbon dioxide emissions annually—while limiting the risk of exposure to highly volatile energy expenses**.

Answers to: Wind can't supply enough energy to reduce emissions

Offshore wind farms can offset emissions and halt warming – they'll produce 4 times the energy we need to power the US

Thaler, Visiting Professor of Energy Policy & Law at University of Maine School of Law and Economics, 2012

(Jeff, "FIDDLING AS THE WORLD BURNS: HOW CLIMATE CHANGE URGENTLY REQUIRES A PARADIGM SHIFT IN THE PERMITTING OF RENEWABLE ENERGY PROJECTS," *Environmental Law*, Vol 42 Iss 4, Sept 17, Online: https://law.lclark.edu/live/files/13156-thalerready-for-websitepdf)

As noted in Part I, **offshore wind energy projects have the potential to generate large quantities of pollutant-free electricity near many of the world's major population centers, and thus to help reduce the ongoing and projected economic, health, and environmental damages from climate change. Wind speeds over water are stronger and more consistent than over land, and "have a gross potential generating capacity four times greater than the nation's present electric capacity**."119 **The net capacity factor for offshore turbines is greater than standard land-based turbines, and their blade-tip speeds are higher than their land-based counterparts.** Offshore wind turbine substructure designs mainly fall into three depth categories: shallow (30 m or less), transitional (30 m to 60 m), and deep water (greater than 60 m).122 Most of the grid-scale offshore wind farms in Europe have monopole foundations embedded into the seabed in water depths ranging from 5 m to 30 m;123 the proposed American projects such as Cape Wind in Massachusetts and Block Island in Rhode Island would likewise be shallow- water installations.124 In deeper water, it is not economically feasible to affix a rigid structure to the sea floor, and floating platforms are envisioned. The three concepts shown below have been developed for floating platform designs, each of which is tethered but not built into the seabed.125 Each design uses a different method for achieving static stability, and some small pilot efforts are underway to demonstrate the performance of different turbines.126 **Greater wind speeds and thus available energy capture are found further from shore, particularly at ocean depths greater than 60 m**.127 **These attributes, combined with their proximity to major coastal cities and energy consumers**,128 **are why, in our carbon-stressed world, offshore wind requires** serious consideration and **prompt implementation**. As demonstrated in the following pages, **however, the maze of federal and state regulatory requirements facing renewable energy projects in general and offshore wind in particular, is especially burdensome**.129 **These requirements undermine the fundamental goal of significantly increasing reliance on emission-free renewable energy sources and, unless substantially revised, will effectively preclude any meaningful efforts to mitigate the many damaging human and economic impacts of climate change**.

Answers to: Warming irreversible

It's not too late—emissions reductions can avoid and delay catastrophic impacts.

Chestney, senior environmental correspondent, 2013

(Nina, senior environmental correspondent, "Climate Change Study: Emissions Limits Could Avoid Damage By Two-Thirds," *Huffington Post*, January, Online: http://www.huffingtonpost.com/2013/01/13/climate-change-study-emissions-limits_n_2467995.html)

The world could avoid much of the damaging effects of climate change this century **if** greenhouse gas **emissions are curbed** more **sharply**, research showed on Sunday. **The study**, **published in** the journal **Nature Climate Change**, **is the first comprehensive assessment of the benefits of cutting emissions to keep the global temperature rise to within 2 degrees C**elsius by 2100, a level which **scientists say would avoid the worst effects of climate change.** It found 20 to **65 percent of the adverse impacts by the end of this century could be avoided.** "Our research clearly identifies the benefits of reducing greenhouse gas emissions - less severe impacts on flooding and crops are two areas of particular benefit," said Nigel Arnell, director of the University of Reading's Walker Institute, which led the study. In 2010, governments agreed to curb emissions to keep temperatures from rising above 2 degrees C, but **current emissions reduction targets are on track to lead to a temperature rise of 4 degrees or more by 2100**. The World Bank has warned more extreme weather will become the "new normal" if global temperature rises by 4 degrees. Extreme heatwaves could devastate areas from the Middle East to the United States, while sea levels could rise by up to 91 cm (3 feet), flooding cities in countries such as Vietnam and Bangladesh, the bank has said. The latest research involved scientists from British institutions including the University of Reading, the Met Office Hadley Centre and the Tyndall Centre for Climate Change, as well as Germany's Potsdam Institute for Climate Impact Research. It examined a range of emissions-cut scenarios and their impact on factors including flooding, drought, water availability and crop productivity. **The strictest scenario kept global temperature rise to 2 degrees C with emissions peaking in 2016 and declining by 5 percent a year to 2050.** FLOODING Adverse effects such as declining **crop productivity and exposure to** river **flooding could be reduced by 40 to 65 percent by 2100 if warming is limited to 2 degrees**, the study said. Global average sea level rise could be reduced to 30cm (12 inches) by 2100, compared to 47-55cm (18-22 inches) if no action to cut emissions is taken, it said. Some **adverse** climate **impacts could also be delayed by many decades**. **The global productivity of spring wheat could drop by 20 percent by the 2050s, but the fall in yield could be delayed until 2100 if strict emissions curbs were enforced.** "**Reducing** greenhouse gas **emissions won't avoid the impacts of climate change altogether** of course, **but** our research shows **it will buy time** to **make things like buildings, transport** systems **and agriculture more resilient to climate change**," Arnell said.

Peak Oil Advantage

Long term extension of tax credits solves clean energy transition

Long term tax credit extensions for offshore wind will spur a renewable transition in the US – that solves oil dependence.

Huelsenbeck, marine scientist for the climate and energy campaign at Oceana, 2013
(Matt, "Offshore Wind Energy: The Coming Sea Change?," *LiveScience.com*, July 15, Online: http://www.livescience.com/38187-wind-turbines-rising.html)

In light of rising gas prices, increased dependence on foreign oil, ocean acidification **and global climate change, it's clear the United States needs to look for alternative and cleaner sources of energy. Offshore wind energy is one such source that, although in early developmental stages in the United States, could offer hope for a future of energy independence and a clean energy economy**.¶ Thankfully, there is some good news on the horizon.¶ The first U.S. offshore wind turbine was recently deployed off the coast of Maine. This pilot project uses a floating platform with a small wind turbine attached to a tower, marking a small, but significant step toward the development of an abundant, clean-energy resource in the United States.¶ **One of the reasons offshore wind energy is so effective is that these winds are stronger and steadier than onshore winds. And offshore winds are strongest during the day as well as in heat waves, when the demand for energy is highest.** In fact, the East Coast of **the United States has been dubbed the "Saudi Arabia" of offshore wind, since there is enough wind energy off this coast to provide the entire country with electricity — if the industry is fully developed**. [For Wind Turbines, Bigger Equals Greener]¶ **Unfortunately, the United States still lags behind** Europe in developing offshore wind farms; in Europe, such infrastructure has been providing jobs and clean energy since 1991**. Although the United States has a lot of catching up to do, the country's floating offshore wind technology is an encouraging step forward. The development of floating turbines is exciting, because some of the strongest offshore winds can be found over deep-water locations**. Conventional offshore wind turbines, which use a steel foundation placed into the seabed, cannot access these sites. Floating offshore wind platforms, however, could be placed in deep-water areas near Maine, California, Oregon, Hawaii and within the Great Lakes.¶ Another big milestone for offshore wind happened in June, when the Bureau of Ocean Energy Management (BOEM) announced that the nation's first competitive lease sales for offshore wind development would be scheduled for July, in an area of ocean off of Rhode Island and Massachusetts. The effort could provide one million homes with emissions-free electricity.¶ **The technology is here, and the demand for clean energy is high, but we will need political support to truly establish an offshore wind industry in the United States**. To that end, Oceana has been working to create **a long-term extension to the Investment Tax Credit (ITC) for offshore wind**, which **would allow offshore wind to flourish, and help the country transition away from fossil fuels and harmful offshore drilling.** Unlike offshore oil drilling, offshore wind is clean and will never spill. **If the United States truly wants energy independence, the country must get serious about developing the untapped wealth of clean, renewable wind energy off its shores.**

Energy Poverty Advantage

Energy Poverty Advantage

High fuel prices are one of the biggest burdens on impoverished families – lowering the cost of energy should be the first priority in solving poverty.

Holt, President of the Consumer Energy Alliance, 2014

(David, "Energy key to solving income inequality," January 28, Online: http://theenergyvoice.com/energy-key-solving-income-inequality/)

When exploring solutions to income inequality policy makers pay close attention to the costs. The cost of healthcare. The cost of food. The cost of child care. The cost of housing.¶ **What about the cost of energy?¶** According to the Bureau of Labor Statistics, in 2012 **the average U.S. family spent over $4,600** or about 9 percent of their budget to **heat and power their homes and fuel their vehicles. Families in the bottom fifth of income earners spent nearly 33 percent more of their budget on energy costs** than average $2,500 a year or 12% of their annual budget. Reference the chart to the left and you will find that **low-income families spend two and half times more on energy than on health services. Unlike food and housing, consumers cannot shop around for the lowest cost energy. Bargains can be found in the supermarket, but, prices at the pump do not vary from one station to the next. Conservation similarly is not an option when it's a choice between driving to work or saving a gallon of gasoline.¶ A solution to remedying income inequality is tackling rising energy costs.** The U.S. Energy Information Administration projects **the price of electricity will rise 13.6 percent and the price of gasoline by 15.7 percent from now until 2040. Rising global demand, aging and insufficient¶ energy infrastructure and restrictive government policies all play a role in increasing costs**.President Obama has the ability to reverse this trend and lessen the blow to all consumers.¶ Take the shale gas boom for example. Increasing access to private and state lands and sound state regulatory programs have boosted production of natural gas and led to a significant lowering of prices. IHS CERA predicted that the shale revolution lifted household income by more than $1,200 in 2012 through lower energy costs, more job opportunities and greater federal and state tax revenues.¶ Policy makers should promote responsible energy development with the knowledge that it will have a positive affect on even the most vulnerable. The president has the power to act. Permitting energy infrastructure – including the Keystone XL Pipeline, opening new offshore areas to oil and natural gas development, and finalizing the nuclear waste confidence rulemaking, could transform the energy economy.¶ **If policy makers want to take meaningful action to help our nation's low income families, they must pursue actions that help lower – not raise – the cost of energy**.

Long term projections prove wind is the cheapest fuel source available to the United States.

Savitz, Vice President for U.S. Oceans and Executive Director of Coast Alliance, 2010

(Jacqueline, "Untapped Wealth: Offshore Wind Can deliver Cleaner, More affordable energy and More Jobs than Offshore Oil," *Oceana Report*, September, Online: http://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf)

As shown in the three previous examples, offshore wind energy can create more electricity, heat more homes or power more¶ cars than the offshore oil and gas that is being considered for¶ production on the East Coast and in the eastern Gulf of Mexico.¶ **Offshore wind energy potential is much greater than that of new¶ offshore oil and gas and the cost is much lower. Developing the¶ 127 gigawatts of offshore wind energy described above would cost about $36 billion less over 20 years than the estimated cost¶ of producing the economically recoverable oil and natural gas¶ combined.** Better still, **unlike the oil and natural gas resources,¶ offshore wind is not finite and**, unlike the oil and gas, **will not¶ become depleted**. However, **the estimated lifetime of an offshore wind turbine is about 20 years** and a new turbine will eventually¶ need to be installed in order to continue to capture wind energy. **Therefore a comparison of costs and benefits over 20 years is an appropriate one.¶** According to MMS, **20 years worth of East Coast offshore oil at¶ $110 per barrel would cost consumers $720 billion, and the natural¶ gas would cost $449 billion. After the East Coast's offshore oil¶ and gas have been extracted, nearly $1.17 trillion will have been transferred from consumers to the oil and gas industry, and then no more energy will be available.**

Developing the 127 gigawatts of offshore wind energy described above – instead of drilling for oil and gas, would cost about $1.13 trillion, $36 billion less than the oil and gas costs over 20 years.
Notwithstanding the cost savings, as described above the wind investment also produced more energy in every scenario considered. By investing in¶ offshore wind on the East Coast, instead of offshore oil and gas in the areas that were previously protected in the Atlantic and eastern Gulf, **Americans would get more energy for less money.¶ There is another downside to high oil and gas prices. As oil and gas prices increase, the industry can use the proceeds to extract resources that were previously not cost-effective to recover – for instance, deep water oil and gas resources. In turn, the oil and gas companies sell these harder-to-extract resources at higher prices to customers**. Thus, **high oil prices not only increase the cost at the pump, they also increase the risks and potential harm to marine life from more extreme production processes**.

You should prioritize small-scale structural impacts – low-probability scenarios have empirically overshadowed everyday suffering in public discourse.

Scheper-Hughes and Bourgois, Professors of Anthropology at Berkeley and UPeen, 2004

(Nancy and Philippe, Introduction: Making Sense of Violence, in Violence in War and Peace, pg. 19-22)

This large and at first sight "messy" Part VII is central to this anthology's thesis. It encompasses everything from the routinized, bureaucratized, and utterly banal violence of children dying of hunger and maternal despair in Northeast Brazil (Scheper-Hughes, Chapter 33) to elderly African Americans dying of heat stroke in Mayor Daly's version of US apartheid in Chicago's South Side (Klinenberg, Chapter 38) to the racialized class hatred expressed by British Victorians in their olfactory disgust of the "smelly" working classes (Orwell, Chapter 36). In these readings violence is located in the symbolic and social structures that overdetermine and allow the criminalized drug addictions, interpersonal bloodshed, and racially patterned incarcerations that characterize the US "inner city" to be normalized (Bourgois, Chapter 37 and Wacquant, Chapter 39). Violence also takes the form of class, racial, political self-hatred and adolescent self-destruction (Quesada, Chapter 35), as well as of useless (i.e. preventable), rawly embodied physical suffering, and death (Farmer, Chapter 34). **Absolutely central to our approach is a blurring of categories and distinctions between wartime and peacetime violence. Close attention to the "little" violences produced in the structures, habituses, and mentalites of everyday life shifts our attention to pathologies of class, race, and gender inequalities.** More important, it interrupts the voyeuristic tendencies of "violence studies" that risk publicly humiliating the powerless who are often forced into complicity with social and individual pathologies of power because suffering is often a solvent of human integrity and dignity. Thus, in this anthology we are positing a violence continuum comprised of a multitude of "small wars and invisible genocides" (see also Scheper-Hughes 1996; 1997; 2000b) conducted in the normative social spaces of public schools, clinics, emergency rooms, hospital wards, nursing homes, courtrooms, public registry offices, prisons, detention centers, and public morgues. **The violence continuum also refers to the ease with which humans are capable of reducing the socially vulnerable into expendable nonpersons and assuming the license - even the duty - to kill, maim, or soul-murder.** We realize that in referring to a violence and a genocide continuum we are flying in the face of a tradition of genocide studies that argues for the absolute uniqueness of the Jewish Holocaust and for vigilance with respect to restricted purist use of the term genocide itself (see Kuper 1985; Chaulk 1999; Fein 1990; Chorbajian 1999). But we hold an opposing and alternative view that, to the contrary, **it is absolutely necessary to make just such existential leaps in purposefully linking violent acts in normal times to those of abnormal times.** Hence the title of our volume: Violence in War and in Peace. If (as we concede) there is a moral risk in overextending the concept of "genocide" into spaces and corners of everyday life where we might not ordinarily think to find it (and **there is), an even greater risk lies in failing to sensitize ourselves, in misrecognizing protogenocidal practices and sentiments daily enacted as normative behavior by "ordinary" good-enough citizens. Peacetime crimes**, such as prison construction sold as economic development to impoverished communities in the mountains and deserts of California, or the evolution of the criminal industrial complex into the latest peculiar institution for managing race relations in the United States (Waquant, Chapter 39), **constitute the "small wars and invisible genocides"** to which we refer. This applies to African American and Latino youth mortality statistics in Oakland, California, Baltimore, Washington DC, and New York City. **These are "invisible" genocides not because they are secreted away or hidden from view, but quite the opposite.** As Wittgenstein observed**, the things that are hardest to perceive are those which are right before our eyes and therefore taken for granted.** In this regard, Bourdieu's partial and unfinished theory of violence (see Chapters 32 and 42) as well as his concept of misrecognition is crucial to our task. By including the normative everyday forms of violence hidden in the minutiae of "normal" social practices - in the architecture of homes, in gender relations, in communal work, in the exchange of gifts, and so forth - Bourdieu forces us to reconsider the broader meanings and status of violence, especially the links between the violence of everyday life and explicit political terror and state repression, Similarly, Basaglia's notion of "peacetime crimes" - crimini di pace - imagines a direct relationship between wartime and peacetime violence. **Peacetime crimes suggests the possibility that war crimes are merely ordinary, everyday crimes of public consent applied systematically and dramatically in the extreme context of war.** Consider the parallel

uses of rape during peacetime and wartime, or the family resemblances between the legalized violence of US immigration and naturalization border raids on "illegal aliens" versus the US government- engineered genocide in 1938, known as the Cherokee "Trail of Tears." Peacetime crimes suggests that everyday forms of state violence make a certain kind of domestic peace possible. Internal "stability" is purchased with the currency of peacetime crimes, many of which take the form of professionally applied "strangle-holds." Everyday forms of state violence during peacetime make a certain kind of domestic "peace" possible. It is an easy-to-identify peacetime crime that is usually maintained as a public secret by the government and by a scared or apathetic populace. Most subtly, but no less politically or structurally, the phenomenal growth in the United States of a new military, postindustrial prison industrial complex has taken place in the absence of broad-based opposition, let alone collective acts of civil disobedience. **The public consensus is based primarily on a new mobilization of an old fear of the mob, the mugger, the rapist, the Black man, the undeserving poor. How many public executions of mentally deficient prisoners in the United States are needed to make life feel more secure for the affluent?** What can it possibly mean when incarceration becomes the "normative" socializing experience for ethnic minority youth in a society, i.e., over 33 percent of young African American men (Prison Watch 2002). In the end **it is essential that we recognize the existence of a genocidal capacity among otherwise good-enough humans and that we need to exercise a defensive hypervigilance to the less dramatic, permitted, and even rewarded everyday acts of violence that render participation in genocidal acts and policies possible** (under adverse political or economic conditions), perhaps more easily than we would like to recognize. **Under the violence continuum we include, therefore, all expressions of radical social exclusion, dehumanization, depersonal- ization, pseudospeciation, and reification which normalize atrocious behavior and violence toward others. A constant self-mobilization for alarm, a state of constant hyperarousal is, perhaps, a reasonable response to Benjamin's view of late modern history as a chronic "state of emergency"** (Taussig, Chapter 31). We are trying to recover here the classic anagogic thinking that enabled Erving Goffman, Jules Henry, C. Wright Mills, and Franco Basaglia among other mid-twentieth-century radically critical thinkers, to perceive the symbolic and structural relations, i.e., between inmates and patients, between concentration camps, prisons, mental hospitals, nursing homes, and other "total institutions." **Making that decisive move to recognize the continuum of violence allows us to see the capacity and the willingness - if not enthusiasm - of ordinary people, the practical technicians of the social consensus, to enforce genocidal-like crimes against categories of rubbish people. There is no primary impulse out of which mass violence and genocide are born, it is ingrained in the common sense of everyday social life. The mad, the differently abled, the mentally vulnerable have often fallen into this category of the unworthy living, as have the very old and infirm, the sick-poor, and, of course, the despised racial, religious, sexual, and ethnic groups of the moment.** Erik Erikson referred to "pseudo- speciation" as the human tendency to classify some individuals or social groups as less than fully human - a prerequisite to genocide and one that is carefully honed during the unremark- able peacetimes that precede the sudden, "seemingly unintelligible" outbreaks of mass violence**. Collective denial and misrecognition are prerequisites for mass violence and genocide.** But so are formal bureaucratic structures and professional roles. The practical technicians of everyday violence in the backlands of Northeast Brazil (Scheper-Hughes, Chapter 33), for example, include the clinic doctors who prescribe powerful tranquilizers to fretful and frightfully hungry babies, the Catholic priests who celebrate the death of "angel-babies," and the municipal bureaucrats who dispense free baby coffins but no food to hungry families. **Everyday violence encompasses the implicit, legitimate, and routinized forms of violence inherent in particular social, economic, and political formations.** It is close to what Bourdieu (1977, 1996) means by "symbolic violence," the violence that is often "nus-recognized" for something else, usually something good. Everyday violence is similar to what Taussig (1989) calls "terror as usual." All these terms are meant to reveal a public secret - the hidden links between violence in war and violence in peace, and between war crimes and "peace-time crimes." Bourdieu (1977) finds domination and violence in the least likely places - in courtship and marriage, in the exchange of gifts, in systems of classification, in style, art, and culinary taste- the various uses of culture. Violence, Bourdieu insists, is everywhere in social practice. It is misrecognized because its very everydayness and its familiarity render it invisible. Lacan identifies "rneconnaissance" as the prerequisite of the social. The exploitation of bachelor sons, robbing them of autonomy, independence, and progeny, within the structures of family farming in the European countryside that Bourdieu escaped is a case in point (Bourdieu, Chapter 42; see also Scheper-Hughes, 2000b; Favret-Saada, 1989). Following Gramsci, Foucault, Sartre, Arendt, and other modern theorists of power-vio- lence, Bourdieu treats direct aggression and physical violence as a crude, uneconomical mode of domination; it is less efficient and, according to Arendt (1969), it is certainly less legitimate. While power and symbolic domination are not to be equated with violence - and Arendt argues persuasively that violence is to be understood as a failure of power - violence, as we are presenting it here, is more than simply the expression of illegitimate physical force against a person or group of persons. Rather, we need to understand violence as encompassing all forms of "controlling processes" (Nader 1997b) that assault basic human freedoms and individual or collective survival. Our task is to recognize these gray zones of violence which are, by definition, not obvious. Once again, the point of bringing into the discourses on genocide everyday, normative experiences of reification, depersonalization, institutional confinement, and acceptable death is to help answer the question: What makes mass violence and genocide possible? In this volume we are suggesting **that mass violence is part of a continuum, and that it is socially incremental and often experienced by perpetrators, collaborators, bystanders - and even by victims themselves - as expected, routine, even justified.** The preparations for mass killing can be found in social sentiments and institutions from the family, to schools, churches, hospitals, and the military. **They harbor the** early "warning signs" (Charney 1991), the **"priming"** (as Hinton, ed., 2002 calls it), or the "genocidal continuum" (as we call it) **that push social consensus toward devaluing certain forms of human life** and lifeways from the refusal of social support and humane care to vulnerable "social parasites" (the nursing home elderly, "welfare queens," undocumented immigrants, drug addicts) to the militarization of everyday life (super-maximum-security prisons, capital punishment; the technologies of heightened personal security, including the house gun and gated communities; and reversed feelings of victimization).

Impact Extension – Affordable energy is a human right

Affordable energy is a human right – it is a prerequisite to clean water, food, medicine and education.

Tully, Fellow at the Economic and Social Research Council, 2006

(Stephen, "The Human Right to Access Electricity," *The Electricity Journal*, 19:3, April, ScienceDirect)

There are several reasons why the rationale underpinning human rights justifies the inclusion of electricity access. First and foremost, a human¶ rights orientation formally recognizes and operationalizes basic needs. **Energy has become generally accepted as a basic need akin to water or food which further conditions access to other essential services such as sanitation, healthcare and education.** For example, the U.N. Development Program (UNDP) observed that ''energy is central to the¶ satisfaction of basic nutrition and health needs.''12¶ **Electricity access in particular has become virtually essential to contemporary human survival. Electricity cooks food, powers household appliances, supports a healthy temperature (heating or air conditioning), provides clean water (by powering pumps or desalination treatment), and enables proper health care (refrigerated vaccines, operating theatres, life support systems, electroshock therapy, emergency treatment, or intensive care). Electricity enables agricultural production, processing, and marketing** (thereby **ensuring food security), provides educational aids** (computers, printers and photocopiers**), encourages social cohesion** (participation in cultural productions, entertainment, or recreation) **and generates income-earning opportunities**.

Answers to: Renewable energy advances fuel poverty

Wind will be affordable in the long term once start-up costs have been covered – government subsidies will ensure price increases are modest in the short term.

Taylor, Governors' Wind Energy Coalition, 2013

(Phil, Reporter, U.S. Investment Could Make Turbines Cost-Competitive by 2030 – Report, online: http://www.governorswindenergycoalition.org/?p=4996)

The cost of offshore wind could compete with conventional and alternative renewable energy sources by 2030 if the United States is willing to invest $18 billion to $52 billion, according to a new report commissioned by offshore wind advocates.¶ **The Brattle Group Inc. study found that such an investment would produce "modest" increases in consumers' monthly energy bills and that investments in the technology would help diversify the country's energy portfolio.¶ "In essence, the cost of scaling up offshore wind looks like a reasonable insurance premium against unexpectedly higher costs under a 'one technology' strategy," the report says**. "At a minimum, some initial support for scaling up offshore wind energy makes sense."¶ The report, commissioned by the Center for American Progress, Clean Energy States Alliance, Sierra Club and U.S. Offshore Wind Collaborative, was released yesterday as a bipartisan group of lawmakers reintroduced legislation that would subsidize the first few thousand megawatts of offshore wind in U.S. waters (E&E Daily, Feb. 28).¶ **Offshore wind is expected to cost about 24 cents per kilowatt-hour in 2016, far higher than onshore wind farms or conventional fossil fuels, according to federal economists. In part, that's because there is no established supply chain in the United States for offshore wind, and some equipment and ships must be imported from Europe**. Installing turbines in the ocean is also more costly, and there is currently no transmission to carry the power to market.¶ **The Brattle study found that with as little as $18 billion over the next two decades, the power source could reach "grid parity" with fossil fuels with "only a minor impact on electricity rates."¶** If spread across the country, those rates would amount to 25 cents to $2.08 per month. If localized to coastal ratepayers — mostly on the East Coast and Great Lakes — it would cost between 51 cents and $4.29.¶ "Given the fact that at present the portion of household consumption spent on electricity and gas is at a 50-year low, **we believe such costs are an acceptable price to pay in exchange for [creating] the option of another cost-competitive power generation technology," said the report**, which was authored by Jurgen Weiss, Mark Sarro and Mark Berkman.¶ **The investment would be comparable to the support other energy sources have received in the past, the report notes**.

Answers to: Wind energy is more expensive than alternatives

Gas prices are subject to supply disruptions and shocks – wind is the only fuel source in existence that can offer a stable price.

Savitz, Vice President for U.S. Oceans and Executive Director of Coast Alliance, 2010
(Jacqueline, "Untapped Wealth: Offshore Wind Can deliver Cleaner, More affordable energy and More Jobs than Offshore Oil," *Oceana Report*, September, Online: http://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf)

Offshore wind energy would reduce the financial risks associated with fossil fuel energy production. For example, **natural gas and oil, both used in electricity generation in the United States, have highly volatile prices. Prices in the United States can be affected by hurricanes that limit oil and gas production in the Gulf of Mexico, or geopolitical conflicts, particularly in the Middle East and Africa. Oil prices are also affected by market speculation, which artificially drives the price higher.** Like other renewable energy technologies, **offshore wind power is insulated from fuel price volatility since its fuel, the wind, is free. The major costs associated with offshore wind farms,** like most renewable energy projects, **are set-up costs**, from purchasing the parts and installing them. **Since operation and maintenance costs are relatively low compared to the upfront costs, offshore wind energy costs can be estimated over the 20-30 year lifespan of the turbines, and energy prices tend to remain more constant for decades**.¶

Answers to: Wind energy is more expensive than alternatives

Recent studies prove wind will cost about the same as existing fuels – that's before accounting for the social costs of pollution and carbon dioxide emissions.

Stirling, reporter, 2014

(Diane, "Wind power cost competitive with natural gas, study finds," *Phys.org*, March 27, Online: http://phys.org/news/2014-03-power-competitive-natural-gas.html)

The costs of using wind energy and natural gas for electricity are virtually equal when accounting for the full private and social costs of each, making wind a competitive energy source for the United States, according to a new study on the federal tax credit for wind energy.¶ Just released by researchers at Syracuse University and the University of California, the analysis shows that **wind energy comes within .35 cents per kWh when levelized over the 20-year life of a typical wind contract, compared on an equivalent basis to the full costs for natural gas-fired energy**, according to Jason Dedrick, associate professor at Syracuse University's School of Information Studies (iSchool).¶ **"The true cost of electricity from wind power and natural gas are effectively indistinguishable, yet because the cost of carbon emissions is not included in the market price of gas, wind has not been a competitive form of energy use in most of the United States, without government pricingsupport**," Dedrick said.¶ **The analysis starts from the U.S. Department of Energy** (DOE) **estimates of the lifetime "levelized" cost of electricity from a new wind farm, and** also from **a**n advanced combined cycle **gas plant**. The analysis develops a new metric that incorporates long-term factors which are not included in the DOE numbers. Accordingly, **the study also reveals that the recently-expired Production Tax Credit for wind makes up for the lack of any mechanism to make fossil fuel generators pay for the cost of carbon emissions,** Dedrick noted.

Answers to: Energy efficient housing is the only way to solve

Energy efficiency programs have multiple flaws – only fuel price reduction would reach all homes.

East Lothian Department of Housing, 2008

(East Lothian Council, "Fuel Poverty Strategy,"
Online: http://www.eastlothian.gov.uk/download/downloads/id/1871/fuel_poverty_strategy)

Criticisms have been made of the effectiveness of energy efficiency programmes in reducing fuel poverty. ¶ For example **there is no prioritisation of households** via the EEC and Warm Deal and central heating initiatives **based on measured risk of fuel poverty. This could result in fuel poor households living in hard to treat properties being left without support to carry out the expensive measures required to remove them from fuel poverty, such as installation of renewable energy heating systems, solid wall insulation and the extension of mains gas supply**.¶ **In addition to this there will be technical difficulties in improving the energy efficiency of some older stone-built properties, which are unlikely to be replaced as a result of their architectural merits**. This could impact on continued fuel poverty risk for residents of these properties.

Solvency

Answers to: No solvency – delays in implementation

Even if there are delays, wind energy development would be fast enough to deal with climate change – and trying to make fossil fuels efficient or develop other renewable energy sources would take longer.

Barbosa et al., Professor of Engineering at the University of Portugal, 2009

(Maciel, Luis Ferreira, Torres Farinha, Inácio Fonsec, Viriato Marques, and António Simões, "Integrating Wind Power energy into electric grids an environmental issue", *Conference on Energy Planning, Energy Savings, Environmental Education,* Online: www.wseas.us/e-library/conferences/2009/lalaguna/EPREWA/EPREWA15.pdf)

The options for making major emissions reductions in the power sector between now and 2020 are basically three: **energy efficiency and conservation; fuel switching from coal to gas; and renewable energy, primarily wind power. This power does not emit** any climate change inducing **carbon dioxide nor other air pollutants which are polluting the major cities of the world and costing billions in additional health costs and infrastructure damage.¶** While developments in 2008 show that the sector is well on track to meeting this target, a strong global signal from governments is needed to show that they are serious about moving away from fossil fuels and protecting the climate. It is not an exaggeration to claim that the future of human prosperity depends on how successfully we tackle the two central energy challenges facing us today: securing the supply of reliable and affordable energy; and effecting a rapid transformation to a low-carbon, efficient and environmentally benign system. Depending on the efficiency measures implemented, **by 2030 world energy needs are predicated to be between 30 and 60% higher than current levels. This sharp increase in world energy demand will require significant investment in new power generating capacity and grid infrastructure**, especially emerging economies such as India and China.¶ Just as energy demand continues to increase, **supplies of the main fossil fuels used in power generation are becoming more expensive and more difficult to extract**. One result is that some of the **major economies** of the world **are increasingly relying on imported fuel at unpredictable cost, sometimes from regions of the world where conflict and political instability threaten the security of that supply. In contrast** to the uncertainties surrounding supplies of conventional fuels, and volatile prices, **wind energy is a massive indigenous power source which is permanently available in virtually every country in the world. There are no fuel costs, no geopolitical risk and no supply dependence on imported fuels from politically unstable regions. Every kilowatt/hour generated by wind power has the potential to displace fossil fuel imports**, improving both security of supply and the national balance of payments, which is not only an issue for the United States which sends more than half a trillion dollars a year out of the country to pay its oil bill. This is an even larger issue for poor countries in Africa, Asia and South America whose economies have been devastated by recent oil price hikes.¶ Wind power also has the advantage that it can be deployed faster than other energy supply technologies. **Even large offshore wind farms, which require a greater level of infrastructure and grid network connection, can be installed from start to finish in less than two years.** This compares with the much longer timescale for conventional power stations such as nuclear reactors.

Answers to: No solvency – delays (technology/regulations)

Their evidence doesn't assume specific policies taken by the Department of Energy and the Department of Interior to improve offshore wind technology and reduce regulatory red tape.

Sciutto, reporter for Talking Points Memo, 2011

(Alex, "Energy, Interior To Foster Offshore Wind Development In New Project," *Talking Points Memo*, Online: http://talkingpointsmemo.com/idealab/energy-interior-to-foster-offshore-wind-development-in-new-project)

The Department of Energy and the Department of the Interior this week **announced the first-ever inter-agency plan to rapidly develop massive offshore wind farms**. The plan is designed to encourage private industry to develop offshore wind farms -- and to produce enough energy to contribute to the Administration's goal of generating 80% of the nation's electricity from clean sources by 2035. If the plans come to fruition, the United States could see thousands of square nautical miles of ocean off the coast of the eastern United States developed into wind farms in the coming decade.¶ "The primary benefit of close collaboration between the Department of Energy and Department of the Interior is to demonstrate the strong commitment of the federal government to developing the nation's offshore wind energy resources in a responsible manner," said Tom Welch, a spokesperson for the Department of Energy.¶ At a joint press conference announcing the initiative earlier this week, Energy Secretary Steven Chu and Interior Secretary Ken Salazar each announced their respective agencies' specific new programs to help foster private development.¶ Chu announced that **Energy would dedicate $25 million to fund research to improve offshore wind technology. The "DOE will support the development of innovative wind turbine design tools and hardware to provide the foundation for a cost-competitive and world-class offshore wind industry in the United States,**" explained a joint press release. **The money will go to projects like the development of open-source computational tools for offshore turbines and studies for how best to set-up the systems that will run a large-scale offshore wind farm**.¶ **The DOE also announced it would invest in economic studies on how to best sell wind energy** once it gets to land as well as a $7.5 million investment in developing the next generation individual wind turbines that convert the wind into energy.¶ At the press conference, **Interior Secretary** Ken **Salazar announced** the **specific areas** in the Delaware, Virginia, Maryland and New Jersey coasts that **will become the first locations of Interior's "Smart from the Start" initiative,** unveiled this past November, **to streamline some of the bureaucratic hurdles that have turned the development of a single offshore wind farm into a decade-long headache of red tape**.

Answers to: No solvency – delays (infrastructure)

Construction is already underway on the infrastructure we need to assemble offshore wind turbines – it won't cause substantial delays.

Morris, correspondent and journalist for NPR, 2014

(Brian, "Marine Commerce Terminal Will Serve Offshore Wind Industry," *Cape and Islands NPR*, March 20, Online: http://capeandislands.org/post/marine-commerce-terminal-will-serve-offshore-wind-industry)

With cleanup complete, workers are focusing on building and reinforcing the terminal itself. The facility mostly will assemble and deploy offshore wind turbine components. And **the first customer is expected to be Cape Wind. Each of Cape Wind's 130 turbines will have 3 blades, each measuring about 160 feet.¶ "So, a staggeringly long blade, all of which will be deployed and assembled here on this facility,"** said White.¶ Eric Hines of the Clean Energy Center said **the terminal is designed to handle turbine components like Cape Wind, but it's also** purposely **versatile**, able to support high-volume bulk and container shipping, industrial equipment, and large specialty marine cargo - because it's not just the wind industry that requires such a large capacity operation.¶ "All the components and all of the vessels are getting larger and larger. They're also getting heavier. And the shipping industry has to be able to be nimble enough with these very large components to move them around in ways that suit a particular project," Hines said.¶ **The US is years behind its European renewable energy counterparts**. But according to Bill White, offshore wind farms will inevitably become part of the landscape.¶ "The United States has been a little bit slow in picking this opportunity up. Obviously, Cape Wind has had had its challenges which we're all aware of, but I think, usually, once America kinda moves toward something and figures it out, they do it in a big way. And I actually do believe, once these projects actually become real, it's gonna be a game-changer," White said.¶ **When it comes online next year, the Marine Commerce Terminal will be the first of its kind in the nation.** The hope among its supporters is that it will revitalize a portion of New Bedford harbor. More than that, that **it will put in place some of the infrastructure and technology needed for the East Coast's emerging offshore wind industry.**

Answers to: Regulatory delays deter investors

Regulatory hurdles are shrinking as government agencies start to cooperate – lack of investment is caused by a lack of stable government support in the form of tax breaks.

Sims, Senior Energy Project Finance Specialist at the Natural Resources Defense Council, 2013

(Douglass, "Fulfilling the Promise of U.S. Offshore Wind," *NRDC Issue Paper*, February, Online: http://www.nrdc.org/business/files/offshore-wind-investment.pdf)

Despite these benefits, today, **exactly zero MW of offshore wind capacity are installed or even under construction in the United States, with only three projects in advanced stages¶ of development:** Cape Wind in Nantucket Sound (468 MW), Deepwater Wind off Block Island, Rhode Island (30 MW), and Fishermen's Energy near Atlantic City, New Jersey (25 MW). The first has long-term supply contracts, called Power¶ Purchase Agreements (PPAs), for approximately 75 percent of its energy, the second has a PPA for all of its output, and the third is awaiting a decision from the New Jersey Board¶ of Public Utilities on whether the project should be awarded Offshore Wind Renewable Energy Certificates (ORECs) under New Jersey's centralized procurement program.¶ Compare this with the rest of the world, particularly in Europe, where offshore wind has been spinning for more than 20 years. According to the European Wind Energy Association, by the end of 2012, Europe had an installed capacity of¶ 4,995 MW distributed among 55 offshore wind farms in 10 countries, including 1,165 MW of capacity installed in 2012 alone.4 In Asia, China was forecast to have commissioned approximately 295 MW of offshore wind by year end 2012, and Japan has deployed demonstration turbines.5 In sum, offshore wind is becoming increasingly mainstream and mature in other countries.¶ **So, what is going wrong? Why is investment flowing in other places but not here? Enormous improvements have been made on siting and permitting, such that they are not the main bottlenecks**. As discussed in detail in the National Wildlife Federation's recent report on offshore wind,¶ **these impediments are being overcome as overlapping governmental entities have begun working together**.6 But there remain fundamental challenges ahead. **The underlying limiting factor for offshore wind, a factor not found in places where the sector has advanced, is that the basic economic and financial conditions for offshore wind success are not in place. Without them, investors are not comfortable providing capital for these projects, and the sector inevitably will struggle to get off the ground**.

Answers to Off Case Arguments

Answers to: Privatization CP

Subsidies key to widespread implementation

Federal policy promoting wind is key to capture public attention and create demand for renewable energy.

Bova, JD from Suffolk University Law School, 2013

(Anthony, "What's the Holdup? How Bureaucratic Obstacles Are Undercutting the True Potential of American Wind Power," *Suffolk University Law Review*, 46:2, Online: http://suffolklawreview.org/bova-wind-power/)

The future of American wind energy lies in the realization that change will not occur overnight. **An industry as complex as wind-energy production will not spring to life** like the wind that powers it. Undoubtedly, careful **attention must be paid to the way wind electricity is created, manufactured, transmitted, and regulated.** Yet developing a centralized, federal regulation system for wind—and wind alone—will unlock the keys to the next chapter in American pioneering and set us on course for energy independence in the future. Considering the amount of time, money, and political posturing spent to extract and import fuel from abroad, **the United States must shift its focus to a future where it controls its own electrical destiny.** Creation of a "National Wind Agency" would not only alleviate a bevy of existing problems for **the federal government**—thereby reducing costs—it **has the potential to capture the nation's attention. Only capturing the attention of the American public will transform its electricity infrastructure. American energy consumption is at a crossroads; the demand will not shrink** to accommodate the rapidly dwindling supply of importable fuel, and the market will not be able to sustain sharp price increases indefinitely. **By investing in wind-energy production in its infancy, the United States can set out on a course for energy independence, embodied in nature's truly unlimited power source: wind**.

Wind industry will collapse without subsidies

The wind industry is growing slowly because tax credits are offered for a year at a time - a long-term tax credit is key to give the wind industry a jump start.

Walsh, Law Clerk for the Superior Court of Connecticut, 2013

(Kevin, "Renewable Energy Financial Incentives: Focusing on Federal Tax Credits and the Section 1603 Cash Grant: Barriers to Development," *environs*, 36:2, Online: http://environs.law.ucdavis.edu/issues/36/2/walsh.pdf)

Renewable energy financial incentive legislation has been volatile. Congress typically extends tax credits or section 1603 cash grants **for a period between one to three years** (the section 1603 cash grant has not been extended, but is still available for a certain period of time).200 **This causes a number of problems for investors, because if the project is not operational before the lapse, the credit/grant will not be awarded. This creates risk in the investment and diminishes investment**.201 As stated above, **the years following lapses approximately have an 80% drop rate in wind installations**.202 **Congress has failed to provide a steady, long-term financial incentive**.203 **This inconsistency discourages long-term planning for wind energy project investments**.204 Congress' unsteady legislation has also pushed manufactures to offshore markets with more certain financial incentives.205 **To avoid constrained growth in the renewable energy market, Congress should make the tax credits/grant available for longer periods of time**. As explained above, many variables delay renewable energy projects. The delays make the one to three year timeframe of the credit/grant availability a risky investment. **Were Congress to implement a long-term tax policy for renewable energy financial incentives, the renewable energy market would grow at a much quicker rate. To attain the United States renewable energy consumption goals, this is a necessary action for Congress to take**.

Subsidies key to spark investment

A long term extension of tax credits would promote private investment – that's important to meet carbon emission reduction goals.

Walsh, Law Clerk for the Superior Court of Connecticut, 2013

(Kevin, "Renewable Energy Financial Incentives: Focusing on Federal Tax Credits and the Section 1603 Cash Grant: Barriers to Development," *environs*, 36:2, Online: http://environs.law.ucdavis.edu/issues/36/2/walsh.pdf)

Second, the **tax credits should be available for longer periods of time**. As described above, **there are many issues that can cause a renewable energy project to extend beyond the anticipated operation date. A two-year extension for tax credits does not provide enough certainty to investors because there is no assurance that the tax credits will be renewed and the project placed in service on time. With uncertain extension of the tax credits, unforeseeable delays may occur, and in a suffering economy investment remains limited**.¶ **To provide greater certainty to investors and spark investment into renewable energy projects, the PTC and ITC should be extended for periods between five and ten years.**225 If the availability of the tax credits/grants is extended, **investors¶ are provided with more certainty that the project will be placed into service before the credit/grant lapses. This should promote investment into new renewable energy developments, and therefore, renewable energy growth across the country**. But in the current economy, the financial feasibility of granting tax credit extensions for longer periods of time remains unknown. **The goal of the United States legislature is to have 20% of renewable energy consumption by year 2030**.226 **The United States is already ahead of its goal**.227¶ **Long-term predictability gives manufacturers, investors, and developers an opportunity to plan for long-term investments**.228 **Given more certainty that the project will be placed in service before the credit lapses, this would "stimulate investment" for renewable energy development and "accelerate the addition" of renewable energy capacity**.229 Developers and investors have also shown interest in accepting smaller financial incentives for a more certain tax policy.230 Smaller but more certain financial incentives should help alleviate part of the financial burden concern of the legislature.

Subsidies key to help wind compete with fossil fuels

The subsidies given to renewable energy are petty compared to the subsidies for fossil fuels – wind needs more government assistance to displace gas and coal.

Pollack, Senior Researcher at The Pew Charitable Trusts, 2012

(Ethan, "Green-energy investments are necessary," *Economic Policy Institute*, October 4, Online: http://www.epi.org/publication/green-energy-investments-fossil-fuel-subsidies/)

Some defenders of fossil fuels oppose these measures, arguing that we shouldn't pick winners and losers, and instead we should let the free market decide how energy is produced. Here's why **they're wrong.¶ Despite the presence of green** investments and **subsidies, the playing field is heavily stacked against renewable energy in favor of fossil fuels. Between 2002 and 2008, federal fossil fuel subsidies totaled $72 billion, nearly 2½ times more than subsidies for renewable energy.¶** President Obama has pushed to eliminate many of these fossil fuel subsidies, only to be rebuffed by the same conservatives in Congress that also argue for "free market"¶ Furthermore, **the historical dominance of fossil fuels creates an entrenched anti-competitive barrier to market entry for renewable energies.¶** If research came out finding that having driver's seats on the right side of cars and driving on the left side of the road was far safer than the current arrangement, would the market naturally react? Of course not. We have an entire infrastructure in place predicated on driving on the right side of the road. More importantly, government itself made this decision.¶ Similarly, **government decided a century ago to have a fossil fuel-oriented economy, and spent nearly half a trillion dollars over that time period to develop the industry and its infrastructure**.¶ **Government created this Goliath, and now is telling David that it can't give him a slingshot because that wouldn't make it a fair fight**.¶ Let's get specific. One of the best green investments we can make today is to modernize and expand our national energy grid.¶ There are many reasons to do this: it will reduce the chance of blackouts, improve energy efficiency, and help shore up what an infrastructure currently vulnerable to national security threats. But it is also the case that wind energy—and to a lesser extent, solar—is disproportionately disadvantaged by our inadequate national grid (most renewable resources lie outside population centers), so expanding it would have the added bonus of helping wind energy compete with coal on a more equal playing field.¶ Finally, **fossil fuels enjoy a subsidy that dwarfs all others: unpriced carbon emissions.¶** At its core, **a subsidy is when the government allows a business to shift a portion of your production costs onto the rest of the country by cutting you a check and taxing everyone else. What happens today with pollution is essentially the same thing.** Coal-fired power plants, for example, are able to shift their production costs onto American families by spewing toxic pollutants into the air, which we then inhale, costing us over $50 billion in damages each year (this cost rises to just under $70 billion if climate change impacts are taken into account).¶ **These companies are essentially taxing us—without representation—in the form of higher mortality and morbidity to pay for their subsidized production**.

Answers to: Turbine Construction DA

Other industries use rare earth minerals

Rare earth mineral extraction is inevitable – other industries like hybrid cars use them.

Gorman, Staff Writer for Reuters, 2009
(Steve, As Hybrid Cars Gobble Rare Metals, Shortage Looms,
http://www.reuters.com/article/2009/08/31/us-mining-toyota-idUSTRE57U02B20090831)

The Prius hybrid automobile is popular for its fuel efficiency, but its electric motor and battery guzzle rare earthmetals, a little-known class of elements found in a wide range of gadgets and consumer goods.¶ That makes Toyota's market-leading gasoline-electric hybrid car and other similar vehicles vulnerable to a supply crunch predicted by experts as China, the world's dominant rare earths producer, limits exports while global demand swells.¶ **Worldwide demand for rare earths, covering 15 entries on the periodic table of elements, is expected to exceed supply** by some 40,000 tonnes annually in several years unless major new production sources are developed. One promising U.S. source is a rare earths mine slated to reopen in California by 2012.¶ **Among the rare earths that would be most affected in a shortage is neodymium, the key component of an alloy used to make the high-power, lightweight magnets for electric motors of hybrid cars, such as the Prius, Honda Insight and Ford Focus**, as well as in generators for wind turbines.¶ **Close cousins terbium and dysprosium are added in smaller amounts to the alloy to preserve neodymium's magnetic properties at high temperatures. Yet another rare earth metal, lanthanum, is a major ingredient for hybrid car batteries**.¶ **Production of both hybrids cars and wind turbines is expected to climb sharply amid the clamor for cleaner transportation** and energy alternatives that reduce dependence on fossil fuels blamed for global climate change.

No supply shortage – other countries produce rare earth minerals

China doesn't monopolize rare-earth elements- they don't have much

Parthemore, Fellow at the Center for a New American Security, 2011
(Christine, "Elements of Security: Mitigating the Risks of U.S. Dependence on Critical Minerals," *Center for a New American Security,* Online: http://www.cnas.org/files/documents/publications/CNAS_Minerals_Parthemore_1.pdf)

Looking at the minerals examined in this report, **in the past decade the most severe case of disruptions with national security implications involved rare earth elements, which are not particularly concentrated geographically. At least eight countries have known reserves, and unknown reserves are expected to be high. The media often refers to China as dominating the rare earths market because it produces and exports almost all of current world supplies, but it possesses only about half of known world reserves – not a terribly high concentration**. 27 **The loss of a single major supplier such as China may** therefore **increase** the **costs** of rare earths. **However, it may not affect their longterm availability, as eventually supplies will be developed elsewhere**.

Wind is cleaner than fossil fuels

Fossil fuels destroying the environment – impacts of wind energy production are limited to small areas and aren't long-lasting.

Savitz, Vice President for U.S. Oceans and Executive Director of Coast Alliance, 2010
(Jacqueline, "Untapped Wealth: Offshore Wind Can deliver Cleaner, More affordable energy and More Jobs than Offshore Oil," *Oceana Report*, September, Online: http://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf)

There's never been a wind blowout. No wind meltdowns. Not a single wind-mining disaster. No ground water contamination from wind fracking. No clean up needed from a wind spill. The point is simple—**the environmental impacts of wind power are**, quite simply, **minuscule when compared to the impacts and risks of other forms of energy production, particularly oil, coal, natural gas, and nuclear. And wind, unlike fossil fuels, does not cause climate change or acidification of the oceans**.¶ This report is focused primarily on the direct economic comparison of wind versus oil and natural gas as an energy source. But direct costs paid by consumers are not the only costs associated with different forms of energy generation. Some of those costs are obvious—the Deepwater Drilling Disaster in the Gulf of Mexico is expected to have costs in the tens of billions—while some are much less obvious. In addition to the increasingly obvious consequences of climate change, **fossil fuels contribute to air pollution that is responsible for hundreds of thousands of deaths each year.** Electricity generation from these fuels is responsible for the consumption of over a trillion gallons a year of increasingly scarce and valuable water.¶ **Offshore wind has none of these impacts.** In fact, **the "fuel" has no impacts whatsoever.** Overall, **most of the negative effects of constructing wind turbines in a marine environment are temporary and localized**. Construction and installation appear to be the most disruptive activities associated with offshore wind farm development.44 Driving monopiles into the seabed (similar to planting a stake in the ground) is noisy and disruptive to sediments.45 Fortunately, practices to minimize disturbance during construction are available (see "Doing Offshore Wind Right" section below).¶ In short, **the wind is a fuel that, unlike fossil fuels and nuclear power, is cost free in every sense. There are no costs to drill, dig, mine, transport or dispose of wind. There are no costs to using wind—no smog, no acid rain, no climate change, no ocean acidification. In comparison to the environmental costs of these traditional forms of energy, offshore wind energy is indeed "free as the wind."**

Offshore rigs protect the environment

Offshore wind farms protect ocean species by providing shelter from fishing and reducing CO2 emissions.

Casy, Senior Communications Officer at European Wind Energy Association, 2012

(Zoe, "Offshore wind farms benefit sealife, says study," *European Wind Energy Association Blog*, December, Online: http://www.ewea.org/blog/2012/12/offshore-wind-farms-benefit-sealife-says-study/)

Offshore wind farms can create a host of benefits for the local marine environment, as well as combatting climate change, a new study by the Marine Institute at Plymouth University has found.¶ The Marine Institute found that **wind farms provide shelter to fish species since sea bottom trawling is often forbidden inside a wind farm, and it found that turbine support structures can create artificial reefs** for some species.¶ **A separate study at the Nysted offshore wind farm** in Denmark **confirmed this finding** by saying that **artificial reefs provided favourable growth conditions for blue mussels and crab species. A study on** the **Thanet** offshore wind farm in the UK **found that some species like cod shelter inside the wind farm.¶** One high-profile issue covered by the Marine Institute study was that of organisms colliding with offshore wind turbines. **The study**, **backed-up by a number of previous studies**, **found that many bird species fly low over the water, avoiding collision with wind turbine blades**. It also found that some species, such as Eider ducks, do modify their courses slightly to avoid offshore turbines.¶ **When it comes to noise, the study found "no significant impact on behaviour or populations."** It noted that a separate study in the Netherlands found more porpoise clicks inside a Dutch wind farm than outside it "perhaps exploiting the higher fish densities found".¶ The study also said that **offshore wind power and other marine renewable energies should be rolled out rapidly in order to combat the threats to marine biodiversity, food production and economies posed by climate change**.¶ "It is necessary to rapidly deploy large quantities of marine renewable energy to reduce the carbon emissions from fossil fuel burning which are leading to ocean acidification, global warming and climatic changes," the study published said.¶ EWEA forecasts that 40 GW of offshore wind capacity will be online in European seas by 2020 which will offset 102 million tonnes of CO2 every year. By 2030, the expected 150 GW of offshore capacity will offset 315 million tonnes of CO2 annually – that's a significant contribution to the effort to cut carbon.¶ **"It is clear that the marine environment is already being damaged by the increasingly apparent impacts of climate change; however it is not too late to make a difference to avoid more extreme impacts,**" the study said.¶ "**If you bring all these studies together they all point to a similar conclusion: offshore wind farms have a positive impact on the marine environment in several ways,**" **said** Angeliki **Koulouri, Research Officer at EWEA**. "**First they contribute to a reduction in CO2 emissions, the major threat to biodiversity, second, they provide regeneration areas for fish and benthic populations,"** she added.

Climate change outweighs species loss

This argument misses the forest for the trees – you should prioritize climate change over small ecological concerns

Zeller, Journalism Fellow at MIT, 2013

(Tom, Cape Wind: Regulation, Litigation And The Struggle To Develop Offshore Wind Power In The U.S.," *Huffington Post*, March 1, Online: http://www.huffingtonpost.com/2013/02/23/cape-wind-regulation-liti_n_2736008.html)

But even those calling for infrastructure permitting reform often say the problem isn't necessarily environmental law as written, but the way in which it is implemented. "Proposals for environmental streamlining originating in Congress often overlook opportunities to overhaul policies and procedures within the current legal framework for environmental review," said Petra Todorovich, director of RPA's America 2050 program, in a statement accompanying the "Getting Infrastructure Going" report. "**Contrary to current thinking, our study found that more federal involvement, not less, tends to speed up environmental reviews of major projects**."¶ **Whatever the solution, it will need to be found quickly if the nation hopes to address the growing climate crisis in a serious way.** In its 2011 climate assessment, the National Research Council stated that **the nation must cut greenhouse emissions by 80 percent by 2050 merely to stabilize the concentration of heat-trapping gases in the atmosphere. The electricity sector accounts for a third of such emissions,** and most experts believe the necessary **reductions simply cannot be achieved without a swift transition to cleaner sources of power**.¶ **"Our existing environmental laws and regulatory processes no longer achieve their underlying goals of long-term ecosystem conservation,"** wrote Thaler, the law professor at the University of Maine. "**To the contrary, these laws and regulations are supporting a system with increasing greenhouse gas emissions that is actually costing trillions of dollars.**

No China war

China would get crushed – the war wouldn't last

Bandow, senior fellow at the Cato Institute, specializing in foreign policy and civil liberties, 2008

(Doug, "Turning China into the Next Big Enemy," March 8, Online: http://original.antiwar.com/doug-bandow/2008/03/07/turning-china-next-big-enemy)

Which leaves the People's Republic of China. **Beijing**, like Russia, **should not be considered an enemy**. However, it has the makings of a great power, even a superpower, which could ultimately face America as a peer. Moreover, with its influence rising in a region that the U.S. government has grown used to dominating, there is real potential for future conflict. That potential makes the PRC the best excuse for Washington to spend ever more on the U.S. military. There are more than a few advocates of the "China as enemy" thesis, penning articles and books about how Beijing is preparing for, and determined to wage, war against America. There are many more practitioners of what passes for cautious centrism: the PRC could become a threat, so the U.S. needs to enhance its alliances and forces in East Asia. Toss in human rights activists and protectionists, who have other reasons for disliking Beijing, and the anti-China coalition grows. The latest addition to the "China as enemy" literature is the Pentagon's newly released "Military Power of the People's Republic of China 2008." In contrast to more fevered attacks on Beijing, this publication is a sober analysis of the PRC's ongoing defense build-up, which we can see but through a glass darkly. China has announced a 17.6 percent increase in military spending this year, bringing it to $58.8 billion, but that number is incomplete at best and misleading at worst. This uncertainty understandably worries the Pentagon. American military expenditures are outlandish, but they are obviously outlandish. Although Washington does hide intelligence expenditures, it's hard not to know how many air wings, carrier groups, and armored divisions, as well as foreign bases, the U.S. is funding. But the Defense Department is even more worried that the Chinese are spending too much, which is essentially defined as developing a military which one day could confront American forces – successfully. It's a fair concern, since Beijing's military build-up is transforming the international environment far more quickly than most American analysts had expected. The PRC has numerous reasons for seeking to create a superior military. The Pentagon notes that China probably is developing forces for use in such contingencies "as conflict over resources or disputed territories." Moreover, Beijing's growing "capabilities will increase Beijing's options for military coercion to press diplomatic advantage, advance interests, or resolve disputes in its favor." As Washington well knows, international political influence is more likely to follow a larger military. Russia has regained regional clout, but remains a smaller global player; Europe is an economic giant but a military midget. Beijing seems intent on twinning soft and hard power to enhance its global clout. Despite the multiple ends, however, the PRC appears to have two more basic goals with its military build-up. The first is to enable the PRC to compel Taiwan, through use of military force, if necessary, to accept some form of reunification. The second is to deter the U.S. from intervening to stop China from using coercion. As the Pentagon observes, "A potential military confrontation with Taiwan, and the prospect of U.S. military intervention, remain the PLA's most immediate military concerns." Indeed, much of the PRC's military program seems directed at creating a credible deterrent to America. The Pentagon reports: "China's nuclear force modernization, as evidenced by the fielding of the new DF-31 and DF-31A intercontinental-range missiles, is enhancing China's strategic strike capabilities. China's emergent anti-access/area denial capabilities – as exemplified by its continued development of advanced cruise missiles, medium-range ballistic missiles, anti-ship missiles designed to strike ships at sea, including aircraft carriers, and the January 2007 successful test of a direct-ascent, anti-satellite weapon – are expanding from the land, air, and sea dimensions of the traditional battlefield into the space and cyber-space domains." It's an impressive list. But **America's military capabilities remain far greater. Why does the PRC need anti-ship missiles for use against aircraft carriers? Because it lacks even one carrier, while the U.S. controls the seas with 12 carrier groups. This country dominates most other military fields as well. America's nuclear missile arsenal is much bigger, more sophisticated, and more deadly than that possessed by China. Washington already is reaching into space with its missile defense program. Thus, the PRC is seeking to deter America from deploying its more powerful forces.** Notes the Pentagon, "Through analysis of U.S and coalition warfighting practices since 1991, Beijing hopes to develop approaches to waging future conflict by adapting and emulating lessons learned in some areas while seeking perceived vulnerabilities that could be exploited through asymmetric means in others." In particular, "As part of its planning for a Taiwan contingency, China is prioritizing measures to deter or counter third-party intervention in any future cross-Strait crisis." Thus, **Beijing might be preparing to confront the U.S. But** the critical question is, **confront the U.S. over what**? If Beijing was plotting the conquest of Guam, Hawaii, and ultimately the North American continent, then Beijing's ongoing military build-up would look dangerous indeed. But there is nothing in China's long history that suggests such overarching ambitions. Unwilling to remain weak and thus subject to coercion by a trigger-happy superpower across the Pacific. Yes. Determined to vigorously assert its perceived interests. Yes. **Expecting international respect and consultation that reflects its increasingly expansive interests and growing power. Yes. Ready to commit global aggression, initiate world war, and wreck both China's and America's futures. No.** Which means the U.S. should think carefully before responding to China's ongoing build-up. The Pentagon speaks of a situation which "will naturally and understandably lead to hedging against the unknown," meaning Washington will need to spend even more on the military. If half of the world's military outlays aren't enough, one wonders how much would be. Two-thirds? Three-fourths? Even more? Washington should not fret. If the goal is defending America, the U.S. possesses sufficiency today. Just catching up with the U.S. will be a daunting task for the PRC. Explained **the Pentagon: "The U.S. Intelligence Community estimates China will take until the end of this decade or longer to produce a modern force capable of defeating a moderate-size adversary. China will not be able to project and sustain small military units far beyond China before 2015, and will not be able to project and sustain large forces in combat operations far from China until well into the following decade**." **Washington already occupies the global summit, with the enormous military**

infrastructure of a superpower. China will not easily displace America with the world's most powerful military. Assume that China, still desperately poor and surrounded by potentially hostile states, decides to deploy one new carrier group a year, no mean task. **The PRC still wouldn't match America until 2020**. Even then Beijing wouldn't be strong enough to take aggressive action against the U.S. homeland or dependencies. To develop an air force capable of dominating U.S. airspace and ground forces capable of invading U.S. territory would be another step well beyond. Most important, **the U.S. possesses what would remain an effective nuclear deterrent against almost any imaginable Chinese missile force.** It's not that the PRC couldn't theoretically construct and deploy more and better nuclear missiles, strategic bombers, and nuclear-armed subs than the U.S., though such a process would take an enormous commitment over many years. But **it's hard to imagine that China could ever deploy enough to create a first strike capability.**

No impact - China lacks critical military capabilities to challenge the U.S

Bitzinger, Senior Fellow with the S. Rajaratnam School of International Studies Monterey Institute, 2008

(Richard, "Why East Asian War is Unlikely," December, Online: http://www.tandfonline.com/doi/abs/10.1080/00396330802601883)

Overall, most Western assessments agree that the PLA has made considerable progress over the past decade in adding new weapons to its arsenal, and that China has noticeably improved its military capabilities in several specific areas - particularly missile attack, power projection over sea and in the air, and information warfare. **Most predict that Chinese military power relative to** its likely competitors in the Asia-Pacific region - especially Taiwan - and **the United States will continue to increase significantly over the next ten to 20 years. There are,** however**, some striking differences of opinion when it comes to interpreting the significance of these hardware developments. Many Western analysts assert that the PLA continues to suffer from considerable deficiencies and weaknesses that limit its ability to constitute a major military threat:** in spite of all its efforts**, China is still at least two decades behind the United States in terms of defence capabilities and technology.** In particular**, the PLA still lacks the logistical and lift capacity -** both by sea and by air **- for projecting force much beyond its borders. China also lags far behind the West in areas such as C^4I architectures and surveillance and reconnaissance capabilities. Some therefore argue that China's current rearmament programme is an incremental, long-term modernisation process that must be understood in the context of competing force-modernisation activities taking place among China's likely rivals.**

Answers to: Nuclear Power DA

Nuclear power industry already declining

Nuclear industry is declining now – multiple causes besides wind like a freeze on reactor licenses.

Douglass, writer for InsideClimate News, 2013

(Elizabeth, First U.S. Nuclear Power Closures in 15 Years Signal Wider Problems for Industry, online: http://insideclimatenews.org/news/20130924/first-us-nuclear-power-closures-15-years-signal-wider-problems-industry)

A string of plant closures, project cancellations and other setbacks has raised new doubts about the future of nuclear power in the United States, but there's disagreement about whether the retrenchment will be limited and temporary or the beginning of a broad and permanent decline. **Renewed safety concerns and reinvigorated local opposition have played a role in the industry's recent troubles**. But **the most potent foe**—and the primary force behind the spate of closures and abandoned projects—**is economic**. **The industry's run of bad news includes: -The early closure of four nuclear power plants**. Two of the plants, the Vermont Yankee reactor and Wisconsin's Kewaunee reactor, were felled by stiff competition. One plant, San Onofre in California, was shuttered amid safety concerns and severely damaged steam generators. And the other, Florida'sCrystal River, was done in by structural damage. - An announcement that Électricité de France SA, the world's largest nuclear plant operator, would withdraw from its joint venture with Exelon Corp. The venture's three nuclear plants—Calvert Cliffs in Maryland and New York's R.E. Ginna and Nine Mile Point—will be run by Exelon. The French company had invested billions of dollars to expand into the United States.¶ - Duke Energy Corp.'s decision to shelve plans for two reactors in Levy County, Fla. (in addition to permanently closing Crystal River).¶ - **A June 2012 court ruling that blocked the federal Nuclear Regulatory Commission from issuing new reactor licenses or renewals until it sufficiently assesses the risks of storing spent radioactive fuel at nuclear plant sites**. ¶ - **The cancellation this year of at least five projects** that would have boosted the power output of existing reactors.¶ - Long delays and billions of dollars in cost overruns for ongoing construction of new reactors in Georgia, South Carolina and Tennessee. **The blows to nuclear power's prospects have come on many fronts, but it was the surprising spurt of plant closures that laid bare the industry's worsening plight. The plant shutdowns are the first to hit the U.S. nuclear power market in 15 years, and the retirements don't bode well for many of the nation's 99 remaining power reactors**. **Analysts say economic woes make at least 10 other plants vulnerable enough to follow suit**.

Grid is reliable – shocks don't cause collapse

The US power grid is reliable – it can adapt to changes in energy production to avoid catastrophic outages.

Barrett, The Lexington Institute, 2012

(Michael, Ensuring the Resiliance of the U.S. Electrical Grid – Part II: Managing the Chaos – and Costs – of Shared Risks, http://www.lexingtoninstitute.org/ensuring-the-resilience-of-the-u-s-electrical-grid-part-ii-managing-the-chaos-and-costs-of-shared-risks/)

The good news regarding the ability of the electrical system to absorb and recover from impacts is that for a variety of routine disruptions such as thunderstorms, minor sub- station failures, and the like **our numerous economic and regulatory imperatives drive fairly resilient operations for much of the electrical power industry**. In fact, **the entire system is designed to meet a "3 nines" reliability standard, which translates to being 99.97% reliable**.11 This overall systemic resilience has evolved over time because industry participants have economic incentives to keep the system operating due to the regula- tions governing their operating agreements. For example, **even if a local generation or transmission disruption occurs most power companies still have to provide power even if it means buying electricity at current market rates** – even though those rates can spike precipitously during those same adverse events. As a result, stable performance is an economic imperative because failure to keep the system operating can cost a tremendous amount of revenue to a firm. **Power companies also have inherent incentives to implement process and structural solutions that minimize downtime following an adverse event**, for in addition to regulatory concerns down- time means electricity is not being used and thus further lost revenues. **The power companies fall under federal and state regulatory oversight for the operation of generating facilities and transmission systems, and the rates that local utilities are allowed to charge is generally regulated by state agencies**.12 This bifurcation of locally set rates but federally and state-mandated performance measures can cause tensions with regard to long term investments because the regulatory oversight prevents free market investments that can be recouped under normal financial operations such as freely-floating prices.¶ Nonetheless, the interplay between regulators and industry works in terms of meeting the routine decisions about investments that need to be addressed, and as a result of these drivers the electricity segment has proven generally highly resilient under most scenarios because its primary components can withstand massive localized degradation without necessarily impacting the rest of the system.

Offshore wind increases grid reliability

Wind farms can change their output to fit national power needs – makes the power grid more stable.

LaMonica, Greentech Media, 2014

(Martin, Study: How wind energy can improve grid reliability, online: http://www.midwestenergynews.com/2014/01/28/study-how-wind-energy-can-improve-grid-reliability/)

Wind energy suffers from an image problem: because it's intermittent, wind complicates the grid's operation and requires fossil fuel power plants for backup. But wind farms could actually improve power reliability in an economic way, according to a recent study.¶ In an analysis, the National Renewable Energy Laboratory (NREL) showed that wind farms can quickly change their output to provide frequency regulation, a service grid operators rely on to ensure reliable power delivery. The finding could change how regulators, grid operators and wind-farm owners view wind energy.¶ **Today, natural gas power plants are often used for frequency regulation. They ramp up output to maintain a balance between power supply and demand, which keeps the grid's frequency signal stable.¶ Wind turbines can perform the same function by lowering their output, according to NREL wind analyst and study co-author Erik Ela. By changing the pitch of their blades slightly, wind turbines can make second-by-second curtailments that allow grid operators to keep the power supply and demand in balance, he said**.¶ Normally, a wind farm operator would not want to curtail a wind farm, since they earn money based on how many megawatts-hours are sold. And because the fuel is free, wind power is typically tapped before other forms of power generation in wholesale energy markets. But **in certain situations, a wind farm can earn more money by providing frequency regulation services, said Ela.¶ "Because the grid values these services so much, [wind farms] can actually earn more money by curtailing and providing services than if they're providing energy," he said**.¶ **For example, there are times in the middle of the night when wholesale energy prices are negative because there is excess wind power. At those times, frequency regulation services would be more valuable than providing energy.**

Economic decline doesn't lead to war

Economic decline doesn't cause war
Barnett, 2009
(Thomas, senior managing director of Enterra Solutions LLC and a contributing editor/online columnist for Esquire magazine, columnist for World Politics Review, Thomas P.M. "The New Rules: Security Remains Stable Amid Financial Crisis," *World Politics Review,* 8/25, Online: http://www.aprodex.com/the-new-rules--security-remains-stable-amid-financial-crisis-398-bl.aspx)

When the global financial crisis struck roughly a year ago, the blogosphere was ablaze with all sorts of scary predictions of, and commentary regarding, ensuing conflict and wars -- a rerun of the Great Depression leading to world war, as it were. Now, as global economic news brightens and recovery -- surprisingly led by China and emerging markets -- is the talk of the day, it's interesting to look back over the past year and realize how **globalization's first truly worldwide recession has had virtually no impact whatsoever on the international security** landscape. None of the more than three-dozen ongoing conflicts listed by GlobalSecurity.org can be clearly attributed to the global recession. Indeed, the last new entry (civil conflict between Hamas and Fatah in the Palestine) predates the economic crisis by a year, and three quarters of the chronic struggles began in the last century. Ditto for the 15 low-intensity conflicts listed by Wikipedia (where the latest entry is the Mexican "drug war" begun in 2006). Certainly, the Russia-Georgia conflict last August was specifically timed, but by most accounts the opening ceremony of the Beijing Olympics was the most important external trigger (followed by the U.S. presidential campaign) for that sudden spike in an almost two-decade long struggle between Georgia and its two breakaway regions. Looking over the various databases, then, we see a most familiar picture: the usual mix of civil conflicts, insurgencies, and liberation-themed terrorist movements. Besides the recent Russia-Georgia dust-up, the only two potential state-on-state wars (North v. South Korea, Israel v. Iran) are both tied to one side acquiring a nuclear weapon capacity -- a process wholly unrelated to global economic trends. And with the United States effectively tied down by its two ongoing major interventions (Iraq and Afghanistan-bleeding-into-Pakistan), our involvement elsewhere around the planet has been quite modest, both leading up to and following the onset of the economic crisis: e.g., the usual counter-drug efforts in Latin America, the usual military exercises with allies across Asia, mixing it up with pirates off Somalia's coast). Everywhere else we find serious instability we pretty much let it burn, occasionally pressing the Chinese -- unsuccessfully -- to do something. Our new Africa Command, for example, hasn't led us to anything beyond advising and training local forces. So, to sum up: No significant uptick in mass violence or unrest (remember the smattering of urban riots last year in places like Greece, Moldova and Latvia?); The usual frequency maintained in civil conflicts (in all the usual places); Not a single state-on-state war directly caused (and no great-power-on-great-power crises even triggered); No great improvement or disruption in great-power cooperation regarding the emergence of new nuclear powers (despite all that diplomacy); A modest scaling back of international policing efforts by the system's acknowledged Leviathan power (inevitable given the strain); and No serious efforts by any rising great power to challenge that Leviathan or supplant its role. (The worst things we can cite are Moscow's occasional deployments of strategic assets to the Western hemisphere and its weak efforts to outbid the United States on basing rights in Kyrgyzstan; but the best include China and India stepping up their aid and investments in Afghanistan and Iraq.) Sure, we've finally seen global defense spending surpass the previous world record set in the late 1980s, but even that's likely to wane given the stress on public budgets created by all this unprecedented "stimulus" spending. If anything, the friendly cooperation on such stimulus packaging was the most notable great-power dynamic caused by the crisis. Can we say that the world has suffered a distinct shift to political radicalism as a result of the economic crisis? Indeed, no. **The world's major economies remain governed by center-left or center-right political factions that remain decidedly friendly to both markets and trade**. In the short run, there were attempts across the board to insulate economies from immediate damage (in effect, as much protectionism as allowed under current trade rules), but **there was no great slide into "trade wars."** Instead, the World Trade Organization is functioning as it was designed to function, and regional efforts toward free-trade agreements have not slowed. Can we say Islamic radicalism was inflamed by the economic crisis? If it was, that shift was clearly overwhelmed by the Islamic world's growing disenchantment with the brutality displayed by violent extremist groups such as al-Qaida. And looking forward, austere economic times are just as likely to breed connecting evangelicalism as disconnecting fundamentalism. At the end of the day, the economic crisis did not prove to be sufficiently frightening to provoke major economies into establishing global regulatory schemes, even as it has sparked a spirited -- and much needed, as I argued last week -- discussion of the continuing viability of the U.S. dollar as the world's primary reserve currency. Naturally, plenty of experts and pundits have attached great significance to this debate, seeing in it the beginning of "economic warfare" and the like between "fading" America and "rising" China. And yet, in a world of globally integrated production chains and interconnected financial markets, such "diverging interests" hardly constitute signposts for wars up ahead. Frankly, I don't welcome a world in which America's fiscal profligacy goes undisciplined, so bring it on -- please! Add it all up and it's fair to say that **this global financial crisis has proven the great resilience of America's post-World War II international liberal trade order.** Do I expect to read any analyses along those lines in the blogosphere any time soon? Absolutely not. I expect the fantastic fear-mongering to proceed apace.

Economic decline doesn't cause war
Ferguson, professor of history at Harvard, 2006
(Niall, "The War of the World: Twentieth-Century Conflict and the Descent of the West ," *Foreign Affairs,* 85(5), September / October, Lexis)

Nor can economic crises explain the bloodshed. What may be the most familiar causal chain in modern historiography links the Great Depression to the rise of fascism and the outbreak of World War II. But that simple story leaves too much out. Nazi **Germany started the**

war in Europe only after its economy had recovered. Not all the countries affected by the Great Depression were taken over by fascist regimes, nor did all such regimes start wars of aggression. In fact, no general relationship between economics and conflict is discernible for the century as a whole. Some wars came after periods of growth, others were the causes rather than the consequences of economic catastrophe, and some severe economic crises were not followed by wars.

Answers to: Statistics prove economic decline causes war

No correlation between economic decline and war- their evidence is based on flawed conclusions

Boehmer, associate professor of political science at the University of Texas, 2010

(Charles, Defense and Peace Economics, "Economic Growth and Violent International Conflict: 1875-1999" June 2010, Volume 21: 249-68, Hopkins)

Crisis-Scarcity as a Source of Violent Conflicts I term the next body of literature the 'Crisis-Scarcity' perspective because it links violent interstate conflicts to domestic or international economic crises. The first group of studies within this broad perspective argues that downswings in Kondratieff cycles in the global economy or other crises of capitalism increase the risk of war. The theories of imperialism by Hobson (1917, 1938) and Lenin (1939 [1916]) make broad arguments in this manner. World-systems or Dependency scholars advance similar arguments (Chase-Dunn, 1978; Frank, 1978; Bosquet, 1980; Hopkins and Wallerstein, 1982; Bergesen, 1983, 1985). However, many of the theories in this category are difficult to test due to conceptual ambigu- ities and the number of available observations, considering that the temporal length of an entire cycle is purportedly 50 to 60 years. Moreover, World-Systems theory lacks an opera- tional definition by which to categorize states into 'periphery', 'semi-periphery', and 'core', making it difficult to quantitatively assess some of its claims. Although there could be strong consensus on how to categorize many states into the core or periphery categories, the roster ECONOMIC GROWTH AND VIOLENT CONFLICT 253 of semi-periphery states is much less clear. However, some propositions in these theories have been tested with historical data or have been covered in studies at the systemic level of analysis. The studies by Mansfield (1988), Goldstein (1988), Pollins (1996), and Pollins and Murrin (1999) yielded results contrary to some of the claims made by World-System theory, or similar theories, relating global economic cycles to violent conflicts. On the one hand, the historical analysis of World-Systems theory examines a longer time-frame than extant quan- titative studies, but on the other hand these historical approaches must assume that the main economic and political processes that shaped much of the past millennium will continue into the future, which may be heroic. Because I am in particular interested in whether individual states become more or less prone to involvement in violent interstate conflicts as their economic growth rises or falls, I do not offer further tests of systemic-level propositions found in the literature. In contrast, studies of diversionary theory make state-level (monadic) or dyadic arguments. **Most studies to date have been monadic and only a few have examined strategic diversionary behavior from a dyadic perspective. Of central importance to this study are those theories of diversionary conflict arguing that economic crisis induces foreign conflicts. However, while diversionary theory has been popular, the bulk of extant research examines the foreign policy of the United States** (Ostrom and Job, 1986; James and Oneal, 1991; Morgan and Bickers, 1992; DeRouen, 1995; Hess and Orphanides, 1995; Wang, 1996; Fordham, 1998; Mitchell and Moore, 2002; Foster, 2006). Meernik (1994) and Meernik and Waterman (1996) **find no evidence of diversionary behavior**. Of more importance to this analysis are those studies that theorize or examine cases more generally at the state-level of analysis. **Russett (1987) finds an inverse relationship between economic growth (two and three year moving averages) and conflict involvement using a pooled time series of 23 countries. In an extension of this study, he later finds evidence that negative growth leads to a higher rate of militarized conflict participation by democracies but that the opposite is true of autocracies (Russett, 1990). When disaggregating by power and polity type, the results appear less clear. Positive growth leads to a higher participation rate in war for democracies** (the sign is positive for autocracies but insignificant), whereas non-democratic major powers were more apt to use force. The sign directions for minor powers of both regime types were negative and statistically insignificant. However, Russett (1990: 126) notes in a larger sample of 100 states from 1953–1976, using the Penn World Tables (Summers and Heston, 1991), that economic growth was statistically insignificant. Considering the limitations in data and the lack of control for autocorrelation, these results could be inaccurate. **Heldt (1999) similarly finds at the state level that while high depriva- tion increases the use of force by states, this is unrelated to regime type or any strategic interactions with other states. His sample though only includes challengers in territorial disputes with negative growth rates, leading to 187 cases, and he thus neither provides a general test of growing states compared with non-growing states nor compares conflict participants to non-conflict participants** (non-barking dogs). Enterline and Gleditsch (2000) examine whether political leaders substitute diversionary tactics with other states for repres- sion when confronted with domestic pressure using the 'leader-year' as the unit of analysis. **While they find that leaders often use both repression and diversion when pressured domestically, the results were unclear concerning economic growth rates and inflation. They dropped these variables from most of their discussion due to limited data and the resulting loss in cases.**

Nuclear power bad – Generic

Nuclear power is extremely dangerous – unlike wind, it is an inherently destructive technology with side effects that can't be reversed.

Cohen, Executive Director of Columbia University's Earth Institute, 2013

(Steven, "No Nukes," *Huffington Post*, April 8, Online: http://www.huffingtonpost.com/steven-cohen/no-nukes_b_3036367.html)

The problem with nuclear power is that we do not know how to manage it effectively, and the risks of mismanagement are irreversible. Our general approach to the use of new technology has always been to use it first and ask questions later. Unlike the way we regulate drugs, we do not follow the precautionary principle when introducing a new method of production. Before we introduce a new drug we test it on animals and eventually on people to learn its main effects and side effects. That is how we adhere to the precautionary principle. **When we introduce new technology for production, we are all like the canary they used to lower down in a cage to test for gas in a coal mine. If the canary came back alive, there was no gas and you could send the miners down. If the canary came back dead, that means there's gas in the mine and it's too dangerous to work. When it comes to nuclear power, we are all canaries lowered into the mine**.¶ **Our arrogance as a species convinces us that we can somehow deal with the impacts of the toxics we have developed and introduced into the environment**. Sometimes we can, and in some cases we have learned how to manage the technologies we have developed. Nuclear power is not one of those technologies. **While we have a reasonable safety record on power generation, we have had little success with nuclear waste.¶ The problem with nuclear technology is that it was developed to be the first weapon of mass destruction**. In the 1950's there was an effort to change the image of nuclear technology- with the "atoms for peace" program pushed by President Eisenhower. This was a well-intentioned, but failed effort to try to put the nuclear genie back in the bottle. Unfortunately **the original goal of nuclear technology was to build in destruction and toxicity. Widespread radiation made the weapon more fearsome and effective. But the same element of the technology that made nuclear an awesome weapon, also made it a dangerous source of energy. In order to build a safe, non-toxic form of nuclear power, we need to start over again** with a very different set of design parameters and objectives. Maybe some day we will do that, but **right now that day seems a long way off**.¶ Geothermal, solar, **wind** and hydropower are not without environmental **impacts and risks**. But those risks **are not irreversible. With over seven billion people on the planet, we should assume that many human activities will damage the environment. Our goal should be to keep that damage to a minimum and make certain that as we learn more we can learn how to reduce, and even reverse, the damage we have done**.

Nuclear power bad – Risk of proliferation

A successful transition to nuclear power would require a massive increase in the production and exchange of nuclear materials – this increases the risk that nuclear materials would fall into the wrong hands and be turned into weapons.

Smith, professor of physics at the State University of New York at Cortland, 2006
(Brice, "Insurmountable Risks: The Dangers of Using Nuclear Power to Combat Global Climate Change," *Institute for Energy & Environmental Research*, Online: http://ieer.org/wp/wp-content/uploads/downloads/reports/InsurmountableRisks_2006.pdf)

While concerns over catastrophic accidents and long-term waste management have received more public attention, **the largest single vulnerability associated with an expansion of nuclear power is likely to be its potential connection to the proliferation of nuclear weapons. In order to fuel the number of nuclear plants envisioned under** the global or steady- state **growth scenarios, increases in the world's uranium enrichment capacity of** approximately two and half to **six times would be required**.996 **Just one percent of the enrichment capacity required by the global growth scenario alone would be enough to supply the highly-enriched uranium for nearly 210 nuclear weapons every year**.997 The risks from such an increase in enrichment capacity are such that even the authors of the MIT report concluded that "**[n]uclear power should not expand unless the risk of proliferation from operation of the commercial nuclear fuel cycle is made acceptably small**."998¶ As discussed in Chapter Three, **the proposals that have been put forth to try and reduce the risks of nuclear weapons proliferation are very unlikely to be successful in a world where the five acknowledged nuclear weapons states seek to retain their arsenals indefinitely**. The institutionalization of a system in which some states are allowed to possess nuclear weapons while dictating intrusive inspections and restricting what activities other states may pursue is not likely to be sustainable. As summarized by Mohamed El Baradei¶ We must abandon the unworkable notion that it is morally reprehensible for some countries to pursue weapons of mass destruction yet morally acceptable for others to rely on them for security -- indeed to continue to refine their capacities and postulate plans for their use.999¶ **Without a concrete, verifiable program to irreversibly eliminate the tens of thousands of existing nuclear weapons, no nonproliferation strategy is likely to be successful no matter how strong it would otherwise be.** As such, **the link to nuclear weapons is likely to prove to be one of the most difficult obstacles to overcome in any attempt to revive the nuclear power industry**.

Nuclear power bad – Target for terrorism

Nuclear power plants are targets for terrorist attacks – results in massive radiation leaks.

Smith, professor of physics at the State University of New York at Cortland, 2006
(Brice, "Insurmountable Risks: The Dangers of Using Nuclear Power to Combat Global Climate Change," *Institute for Energy & Environmental Research*, Online: http://ieer.org/wp/wp-content/uploads/downloads/reports/InsurmountableRisks_2006.pdf)

In addition to its link to nuclear weapons proliferation, **the potential for a catastrophic reactor accident or well coordinated terrorist attack to release a large amount of radiation adds to the unique dangers of nuclear power. Such a release could have extremely severe consequences for human health and the environment, would require very expensive cleanup and decontamination efforts, and would leave buildings and land dangerously contaminated well into the future**. The CRAC-2 study conducted by Sandia National Laboratories estimated that **a worst case accident at some of the existing nuclear plants in the U.S. could result in tens of thousands of prompt and long-term deaths and cause hundreds of billions of dollars in damages.**1000 **Even if** a reactor's secondary containment was not breached, however, and **there were not** dangerously **large** offsite **releases of radiation, a serious accident would still cost** the utility **a great deal due both to the loss of the reactor and the need to buy replacement power.** As summarized by Peter Bradford, a former commissioner of the Nuclear Regulatory Commission,¶ The abiding lesson that Three Mile Island taught Wall Street was that a group of N.R.C.-licensed reactor operators, as good as any others, could turn a $2 billion asset into a $1 billion cleanup job in about 90 minutes.1001

Nuclear power bad – Radioactive waste

A surge in nuclear power would result in a huge increase in radioactive waste – and there are no effective disposal methods.

Smith, professor of physics at the State University of New York at Cortland, 2006
(Brice, "Insurmountable Risks: The Dangers of Using Nuclear Power to Combat Global Climate Change," *Institute for Energy & Environmental Research*, Online: http://ieer.org/wp/wp-content/uploads/downloads/reports/InsurmountableRisks_2006.pdf)

Finally, **the difficulty of managing the radioactive wastes generated by the nuclear fuel cycle is one of the longest standing challenges accompanying the use of nuclear power. In addition to its high radiotoxicity, the existence of large quantities of weapons usable plutonium in the spent fuel complicates the waste management problem by raising concerns over nuclear weapons proliferation**.1002 While the management of low- level waste will continue to pose a challenge, by far the largest concern regarding radioactive waste management is how to handle the spent nuclear fuel. **Greatly complicating this task are the very long half-lives** of some of the radionuclides present in this waste (for example plutonium- 239 – half-life of 24,000 years, technetium-99 – half-life of 212,000 years, cesium-135 – half-life of 2.3 million years, and iodine-129 – half- life of 15.7 million years).¶ Through 2050**, the expansion of nuclear power** under the global growth scenario **would lead to nearly a doubling of the average rate at which spent fuel is currently generated** with proportionally larger increases under the steady-state growth scenario. Assuming a constant growth rate for nuclear plant construction, and that Yucca Mountain itself was successfully licensed and built, **a new repository** with the capacity of Yucca Mountain **would have to come online** somewhere in the world **every six years in order to handle the amount of waste** that would be generated under the global growth scenario. For the steady state growth scenario a new Yucca Mountain sized repository would need to be opened every three years on average just to keep up with the waste being generated.1003¶ **The characterization and siting of repositories rapidly enough to handle the volumes of waste that would be generated by a nuclear revival would be a very serious challenge**. The site of the Yucca Mountain repository has been studied for more than two decades, and it has been the sole focus of the Department of Energy since 1987. However, despite this effort, and nearly $9 billion in expenditures, as yet no license application has been filed and a key element of the regulations governing the site has been struck down by the courts and re-issued in draft form. Adding to the uncertainty about the repository's future is the fact that the draft standard proposed by the EPA in August 2005 would be the least protective¶ by far of any repository regulation anywhere in the world, and will therefore likely face future challenges.

Answers to: Wind requires fossil fuel backup because it's intermittent

Wind is steady in the ocean – and strongest in warm weather when demand is highest.

Huelsenbeck, marine scientist for the climate and energy campaign at Oceana, 2013
(Matt, "Offshore Wind Energy: The Coming Sea Change?," *Live Science*, July, Online: http://www.livescience.com/38187-wind-turbines-rising.html)

One of the reasons offshore wind energy is so effective is that these winds are stronger and steadier than onshore winds. And **offshore winds are strongest during the day as well as in heat waves, when the demand for energy is highest**. In fact, **the East Coast of the United States has been dubbed the "Saudi Arabia" of offshore wind, since there is enough wind energy off this coast to provide the entire country with electricity — if the industry is fully developed**.